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THE
CYCLOPÆDIA OF EDUCATION.

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THE

CYCLOPÆDIA OF EDUCATION:

A

DICTIONARY OF INFORMATION

FOR THE USE OF

TEACHERS, SCHOOL OFFICERS, PARENTS, AND OTHERS.

EDITED BY

HENRY KIDDLE,
SUPERINTENDENT OF PUBLIC SCHOOLS, NEW YORK CITY,
AND
ALEXANDER J. SCHEM,
ASSISTANT SUPERINTENDENT OF PUBLIC SCHOOLS, NEW YORK CITY.

THIRD EDITION.
WITH APPENDIX.

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PREFACE.

The work here offered to the public is the first cyclopædia of education in the English language, although the need of such a work has long been felt. Cyclopædias, both general and special, are rapidly increasing in number, not only in countries in which the English language is spoken, but wherever, under the influence of advancing civilization, literature flourishes, and the cultivation of science and art has enlarged the boundaries of human knowledge. Information scattered through a multitude of volumes is usually inaccessible to those by whom it is most needed; and, consequently, the most important results of study and research are often of no avail to those whose special office it is to apply them to a practical purpose. Hence, the need of works that present in a condensed form, and so as readily to be referred to, all the important facts in the various departments of human knowledge; and, consequently, we find that it is fast becoming the habit of the educated classes every-where to consult such works. In view of the large number of special cyclopædias in other departments of knowledge, and more especially of the excellent cyclopædias of education which Germany has possessed for many years, it is quite surprising that a branch of knowledge so extensively valued and studied as education, should have continued, in this country and in England, for so long a time without its special cyclopædia. Accordingly, the first announcement of this work was, on all sides, greeted with the most earnest expressions of approbation and welcome.

The value of a work of this kind must, of course, depend on the plan which forms its groundwork, and the accuracy and fullness with which the plan is carried out. To both of these points the editors have given their undeviating attention, striving to leave nothing to be desired in either respect.

The plan of the work has been constructed after a careful examination, not only of all the cyclopædias and general histories of education which have thus far appeared, but of the principal cyclopædias, both general and special, which have been published in English or in other languages. Of course, the editors did not contemplate, for a moment, the task of undertaking a work of the magnitude of Schmid's great German encyclopædia of education, which was commenced in 1857, and of which the last (11th) volume is not yet completed, although a revised and enlarged edition has already been issued of the first volume. Their design was to prepare a work which, while comprehensive and complete within its scope, would be of moderate size, and would be completed within a reasonable time—a work which, while useful to all, would, like the dictionary, be upon every teacher's desk, to be consulted whenever occasion might require, thus affording information and practical aid at every exigency of his daily labors. Such a work, it was thought, would not only supply valuable information, but would stimulate the study of pedagogy, still very widely neglected because of the want of a brief but comprehensive embodiment of the whole subject.

In accordance with these views, the editors now present, a little more than two years after the first announcement of the work, a single volume of nearly 900 pages, in which they have endeavored to treat, in alphabetical order, of all the subjects, which they have deemed to come within the limits of their plan, embracing the following general topics: (1) *Theory of Education and Instruction* (pedagogy and didactics), including a consideration of the principles of education, in each of its departments, with practical suggestions as to the best methods of applying them, both in training and instruction. In this connection, it will be found that every subject ordinarily embraced in the school or college curriculum has been carefully treated in its relation to practical education, special attention having been given to the department of language, both the classical and the important modern languages being separately considered. (2) *School Economy*, including the organization and management of schools, also discipline and class teaching. (3) *The Administration of Schools* and *School Systems* — embracing supervision, examinations, school hygiene, school architecture, co-education of the sexes, etc. (4) *Governmental Policy in regard to Education* — including such subjects as state education, compulsory attendance laws, the secular and denominational systems, etc. (5) *The History of Education*, giving an account of the most noted plans and methods of instruction and school organization that have been proposed, or that are now in vogue, as well as the history of the school system of every state and territory in the Union, and of every important country in the world. Much of the matter under this section is entirely new, and will be found to be of great interest. (6) *Biographical Sketches* of distinguished educationists, educators, and others who have been celebrated for their efforts as promoters or benefactors of educational progress or enterprise. (7) *Statistical* and other information in regard to (a) schools and other institutions of learning of different countries, states, cities (in the United States, of those having a population of 100,000 and upward), and religious denominations (the latter treated with considerable fullness); (b) different kinds of schools, as public schools, private schools, parochial schools, academies and high schools, kindergartens, colleges and universities. Every important college or university in the United States has been described in a separate article; and special articles also inserted on the great universities in England, the latter articles having been written in that country. Considerable care has also been taken to show what has been done, during the last few years, for female education, and more particularly for the higher education of women (especially in this country and in Great Britain). (8) *Educational Literature*, which is constantly brought to the notice of the reader in connection with the various articles. As the immense mass of material to be condensed within the compass of a single volume has necessitated the greatest possible brevity, references are made throughout to standard works on educational science, as well as to statistical works affording more detailed information. It is believed that this will prove one of the most valuable features of the work. (9) The main work is followed by an *Analytical Index*, in which reference is made to the principal topics of all the longer articles, as well as to the pages on which the more important subjects are treated incidentally.

Of course, the editors of a cyclopædia cannot be expected to carry out their plan without the support of an adequate corps of able contributors. However extensive their own information may be in relation to the general subject, there must always be many topics to the details of which specialists have devoted a much more minute study, and of which, therefore, their knowlege must be more comprehensive and exact. The list of special contributors which follows this preface will show to what extent the editors have succeeded in securing the co-operation of distinguished educators and writers in the preparation of this work. Most of the names presented will be at once recognized as those of persons of well-established reputation for successful experience in their respective spheres of effort. The editors deem themselves singularly fortunate in securing to so large an extent the aid and co-operation of the state and city superintendents throughout this country, the articles on the school systems having been prepared by them or under their direction, or compiled from the latest and most accurate information officially supplied by them. The articles on the different classes of professional, scientific, and denominational schools and colleges have, in the main, been written by persons professionally conversant with those institutions, and thus afford an amount and kind of information very difficult to obtain, but often of great value to students and educators.

It is proper to say that the announcement of this work has met with a most earnest and encouraging response from educators in Great Britain, and that the editors have received most prompt and valuable assistance, as well as cordial co-operation, from that source, so as to enable them to carry out their intention to make the usefulness of the *Cyclopædia* co-extensive with the English-speaking race. It is, however, a cause of deep regret to the editors that a long illness, terminating in death, deprived them of the co-operation of one of the ablest and most highly esteemed English educators, the late Joseph Payne, who not only was among the first to afford encouragement to this work when proposed, but promptly engaged to contribute a number of important articles.

As a work of reference for information in regard to American institutions for higher education, the *Cyclopædia* will, it is hoped, prove eminently satisfactory. Great pains has been taken to secure the fullest and most accurate information respecting the colleges and universities of this country; for which purpose, every article of this description has been submitted, in proof, to the president of the institution described, and, with but very few exceptions, has received the benefit of his revision.

The editors also acknowledge their indebtedness for the very full information, in regard to the educational work of the various religious denominations of the United States and Great Britain, which they have received from distinguished members of those denominations. Very much of this information could have been obtained by no other means than by a long official connection with the educational boards of the churches, and, to a considerable extent, is now supplied exclusively by this work.

To all the contributors the thanks of the editors are due for a support without which the work could not have been completed—at any rate, could not have possessed the value which may, with considerable confidence, be attributed to it; and certainly could not have earned the approval which it may justly be expected to receive. The editors, also, take occasion to express their obligations to the many friends who, though not special contributors, have afforded valuable aid in the revision of special articles, in giving important advice, or in affording needed information.

In these few remarks, the editors have briefly stated the object they have striven to attain, and some of the instrumentalities of which they have availed themselves; but they are by no means so presumptuous as to suppose they have produced a work without fault or blemish. The *Cyclopædia*, it must be borne in mind, is but a pioneer, opening out, it is to be hoped, a wide path for further literary and professional effort in the same direction. It will, doubtless, share the fate of all books of its class, in which the habitual reader, as well as the scrutinizing critic, by the side of that which elicits his approval, meets with statements that are capable of improvement or that require correction. In every future edition of the work, pains will be taken to correct what is faulty and to improve what is imperfect; and any assistance which those who appreciate the aim of the work may be able to render to that end, will be gratefully acknowledged.

New York, March 17, 1877.

NOTICE OF THE THIRD EDITION.

In issuing the Third Edition of the *Cyclopædia*, the publishers would express their grateful acknowledgments to the educational public for the favorable reception hitherto accorded to it, and the many appreciative, commendatory notices it has received from scholars and educators of the highest culture and the ripest experience. For the present edition of the work, the articles have been carefully revised for the correction of inaccuracies, but no essential change has been made in any of them. In order, however, to bring the work down to the present time, a brief Supplement has been added, containing a summary of the latest educational statistics of this country, as far as they have been received in reply to inquiries. It has been considered best thus to limit the information given, and to refer for further particulars to the official reports and catalogues.

E. Steiger & Co.

New York, Feb. 1, 1883.

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THE CYCLOPÆDIA OF EDUCATION.

ABACUS (Gr. ἄβαξ, a slab or board), a piece of school apparatus, used to facilitate the teaching of children to count, and perform other simple arithmetical operations. Various forms of the abacus are employed as counting or adding machines. Such a contrivance was much used among the ancients; and in China, quite long and difficult computations are performed by means of such an instrument, called *swan-pan*. (See Numeral Frame.)

ABBOT, Benjamin, LL. D., distinguished for his long connection with Phillips Academy, Exeter, N. H., of which institution he was the principal for a period of fifty years, from 1788 to 1838. He was a graduate of Harvard College. He died at Exeter in 1849, at the advanced age of 86 years. Edward Everett delivered one of his graceful and elegant speeches on the occasion of the retirement of Dr. Abbot from the principalship of Phillips Exeter Academy.—See Everett, *Orations and Speeches*.

ABBOTT, Rev. Jacob, a distinguished clergyman, teacher, and author, was born at Hallowell, Me., in 1803, and graduated at Bowdoin College in 1820. He was professor of mathematics and natural philosophy in Amherst College from 1825 to 1829, and afterwards took charge of the Mount Vernon school for girls, in Boston. In connection with education, he is chiefly noted for his numerous books for the young, among which may be particularly mentioned the *Rollo Books*, the *Franconia Stories*, the *Harper Story Books*, *Science for the Young*, and *The Teacher*. A full catalogue of his publications embraces about 200 titles. He has also edited many other educational works, and compiled a series of reading books. His brothers, Rev. Gorham D. and Rev. John S. C., are also noted for their labors in the field of educational and literary effort.

A B C, the first three letters of the English alphabet, often used to denote the alphabet itself; as, "To learn A B C is felt to be extremely irksome by the infant." *Taylor*. (See Alphabet.)

A-B-C BOOK, a primer, or little book used to learn the alphabet and its simplest combinations, with the most rudimental lessons in reading. (See Horn-Book.)

A-B-C METHOD. See Alphabet Method.

ABECEDARIAN. This word, formed from the names of the first four letters of the alphabet, is generally used to denote a pupil who has not advanced beyond the most elementary stage of school or book education, that is, who is learning A B C, or the alphabet. The name has been sometimes applied to one engaged in teaching the alphabet. (See Reading, and Word Method.)

A-B-C SHOOTERS (Germ. *ABC-Schützen*), pupils of those scholastic vagrants who, during a certain period of the middle ages, and even later, used to wander through many parts of Germany, giving instruction to such pupils as they could pick up, who accompanied them in their journeyings. These itinerant teachers were called *Bacchants*, from their disorderly lives and their disposition to indulge in wild revels. Their pupils were often obliged to purloin food, fowls, etc., to supply their masters' wants, and hence were called, partly in derision of their elementary knowledge, A-B-C Shooters — *shoot*, in their parlance, being the slang word for *steal*.—See Schmid, *Encyclopädie;* and Barnard, *American Journal of Education*, vol. v.

ABÉLARD, or **Abailard, Pierre,** one of the most famous teachers of philosophy and theology in the middle ages, was born in Nantes, in 1079, died April 21st, 1142, at St. Marcel, near Chalons-sur-Saône. A pupil of William of Champeaux in philosophy, and of Anselm of Laon in theology, he became the dreaded and hated rival of both, as they found themselves entirely eclipsed by the cosmopolitan reputation of their pupil, who for a time was regarded in the Christian world as the foremost of all living teachers. The tragic end of his love for his pupil Heloise, whom he had seduced, closed to him the higher ecclesiastical dignities, and drove him into the austerities and retirement of monastic life; but his theological and philosophical writings continued to keep the Christian world in a high state of excitement. His opinions were repeatedly condemned by councils and synods as heretical, but he always preferred submission to the sentence of the Church rather than open defiance. His influence on the schools of the middle ages was, without doubt, greater than that of any of his contemporaries. He introduced dialectics into theology, and thus, as Cousin says, "contributed more than any other to the foundation of scholasticism."

A complete edition of the works of Abélard was published by Cousin (2 vols., Paris, 1849—1859), containing also valuable notes by the editor. Among the best biographical works on Abélard are those by Rémusat (*Abélard*, 2 vols., Paris, 1845), and Wilkens (*Peter Abälard*, Göttingen, 1855).—See also Schmidt, *Geschichte der Pädagogik*.

ABERCROMBIE, John, M. D., was born at Aberdeen, in 1781, and died in 1844. In his profession as a physician he rose to great eminence, and was widely distinguished for his writings on medical subjects. In connection with education, he is noted for his *Inquiries con-*

cerning the Intellectual Powers, and *The Philosophy of the Moral Feelings*. These two works possess great merit, and have been quite extensively used as school text-books. They were edited and adapted to the use of schools in this country by Jacob Abbott.

ABINGDON COLLEGE, at Abingdon, Ill., under the control of the Disciples of Christ, was founded in April, 1853. The number of students in the institution in 1875 was about 180. It has an endowment of $20,000. The college building is a handsome edifice well supplied with modern furniture and appliances. There are about 1000 volumes in the library, besides which the institution has a museum and laboratory. The names of its successive presidents are Patrick Murphy, J. W. Butler, and Oval Pirkey. The annual tuition fee is from $30 to $39.

ABSENTEEISM is opposed to regularity in the attendance of pupils belonging to a school; that is, the number of school sessions from which a pupil was absent, as compared with the number at which he was present, during any particular period, gives the absenteeism of the pupil for that period. The average daily attendance of pupils divided by the average daily enrollment — the "average number belonging"—shows the percentage of attendance; and this subtracted from 100 gives, of course, the percentage of absenteeism. Within certain limits, this is a criterion of efficiency of management and instruction. Class teachers who interest their pupils necessarily secure a more regular attendance than those who fail in this respect; and principals of schools who keep a careful watch over all the pupils belonging to their schools, strictly and uniformly enforcing wholesome rules of discipline, and carefully notifying parents of the absence of their children, inquiring into the cause of the same, and admonishing both parents and pupils of the need of strict regularity, will, of course, succeed best in this regard. Where the basis for computing the degree of absenteeism is the average enrollment, and where regularity of attendance is made a test of efficient management, teachers will be more careful to keep the number of pupils on the rolls as little as possible above the average attendance. Hence, to render this test reliable, a uniform rule should be followed in the discharging of pupils for non-attendance. Such a rule has been adopted in many cities of the Union, any pupil's name being invariably dropped from the roll after a certain number of days of absence, however caused. This is based on the principle that irregularity of attendance—being at school one day, one week, or one month, and absent the next—is not only of no profit to the pupil concerned, but a positive injury to the other pupils, and is a serious hindrance and embarrassment to the teacher in the management of the school. To some extent, absenteeism thus computed may indicate also the prevailing tone of the community in regard to education — the degree of appreciation of the benefits of education generally felt by the people, as inducing parents to sacrifice their own personal advantage, in the employment of their children, to the interests of the latter, in enjoying the benefits of school instruction.

"Absenteeism" is also technically applied to a total neglect of school attendance by a part of the school population of any place. This is exhibited by a comparison of the average attendance of pupils with the census of children of school age. (See ATTENDANCE.)

ABSTRACT AND CONCRETE. These terms have a very important application in many departments of practical education. *Abstract* has reference to general ideas, or the ideas of qualities considered apart from the things to which they belong; *concrete*, to those which are only conceived as belonging to particular objects or substances. Thus, if we speak of a man, a horse, a tree, etc., we use abstract or general ideas; for we are not thinking of any particular object of the class, but only of the assemblage of qualities or characteristics that especially belong to all the members of the class. But when we mention such names as Cicero, Washington, John Smith, etc., we have in our mind a conception of the characteristics that served to distinguish those persons from all other men. Thus, the expression *five pounds* represents a concrete idea; the word *five*, an abstract one.

The immature minds of young children employ to a great extent concrete ideas, and hence the instruction addressed especially to them should deal principally with these. As the mind advances, it becomes more and more occupied with abstract conceptions, which constitute the material for all the higher forms of thought and ratiocination.

ACADEMY (Gr. *'Ακαδήμια* or *'Ακαδήμεια*) was originally the name of a pleasure ground near Athens, and was said to be so called after Academus, a local hero at the time of the Trojan war. Its shady walks became a favorite resort for Plato; and, as he was accustomed to lecture here to his pupils and friends, the school of philosophers which was founded by him was called the *Academic School*, or merely the *Academy*. In the history of ancient philosophy, three different academies are distinguished, the *Old Academy*, formed by the immediate followers of Plato, the *Middle Academy*, founded, about 244, by Arcesilaus, and the *New Academy*, whose founder was Carneades, about 160 B. C. Sometimes the philosophical schools founded by Philo and Antiochus are called respectively the *Fourth* and the *Fifth Academy*. Among the Romans, Cicero, who regarded himself as an adherent of the Academic philosophy, gave the name of Academy to the gymnasium at his villa near Tusculum, as well as to one of his villas in Campania, where he wrote his *Academicæ Quæstiones*. During the middle ages, the term was but little used for learned institutions; but, after the revival of classical studies in the 15th century, it again became frequent. In a wider sense, it was sometimes applied to higher institutions of learning in general. Gradually, however, its use was, in most countries, restricted to special schools, as academies of mining, of commerce, of forestry, of fine arts, and, especially, of music. In England and the United States, the national high schools for the education of military and naval officers are called academies. Thus, England has the Naval Academy at Portsmouth, and the Royal Military Academy at Woolwich; and the United States, the Military Academy at West Point, and the Naval Academy at Annapolis. In the United States, the name has also been assumed by a large number of secondary schools, which are designed to prepare their pupils for colleges, or to impart a general knowledge of the common and higher branches of education. As they are, in nearly all cases, private institutions, independent of any control by state boards, their courses of instruction widely differ, ranging from the lowest primary class to the highest classes of grammar and high schools. They are usually both boarding and day schools.

The name *academy* is also employed to designate associations of learned men for the advancement of science and art. Some of these associations are of an entirely private character, others have been founded by the state. The first academy of this kind was the Museum of Alexandria, in Egypt, which was founded by Ptolemy Soter. After its model, the Jews, toward the close of the first century of the Christian era, began to establish academies for the development of Talmudic science. Later, the Arabian caliphs established academies at their places of residence, to show their interest in the promotion of science. Efforts to establish Christian academies of this kind were made by Gregory the Great and Charlemagne, but both failed. It was not until the middle of the fifteenth century, that associations of this kind were formed in Italy for the purpose of fostering the free development of science and art, in opposition to the rigid conservatism of the monastic and ecclesiastical schools. They gave special attention to the cultivation of the Italian language and literature. It was especially the *Accademia della Crusca*, founded at Florence by the poet Grazzini, to which the Italian language is indebted for its purification and development. From Italy, these institutions spread to the other countries of Europe; and, as they became the centers of literary activity, they exercised every-where a prominent influence upon the intellectual progress of the several countries, and, especially, upon the improvement and regulation of the native tongue. Prominent among these academies, was the *Académie française*, instituted, in 1635, by Cardinal Richelieu. In 1795, it was united with three other French academies into the *Institut national*, the name of which was changed by Louis XVI. into *Institut de France*. The Institute consisted then of four academies: (1) *l'Académie française*, (2) *l'Académie des inscriptions et belles lettres*, (3) *l'Académie des sciences*, (4) *l'Académie des beaux arts*. A fifth academy, *l'Académie des sciences morales et politiques*, was added in 1832. These academies are among the most important of the kind in the world, and their influence on other educational institutions has been considerable. The *Académie française* is the highest authority upon every thing relating to the niceties of the French language, to grammar, and the publication of the French classics. The *Académie des inscriptions et belles lettres* embraces among the objects of its attention comparative philology. Like the French Institute, the academies in the capitals of Spain, Portugal, Sweden, Russia, and other countries, have gradually become great national centers for the promotion of science and art; but no such centralization has been effected in Italy, Germany, England, or the United States. In England, the learned corporations corresponding to the continental academies of sciences have generally the name society or association. England proper has, however, a royal academy of arts (founded in 1765, re-organized in 1768) and a royal academy of music (established in 1822); and in Edinburgh, there is a royal academy of yachting (founded in 1754). In Ireland, the name academy, according to its continental use, has been adopted for the Royal Academy of Sciences at Dublin (founded in 1782). — In the United States of America there are also a number of learned societies to which the name *academy*, in the sense used on the continent of Europe, has been applied. The following societies are called academies: The *American Academy of Arts and Sciences*, at Boston (founded in 1780), the *Connecticut Academy of Arts and Sciences* (founded in 1799), the *Academy of Natural Science* in Philadelphia (founded in 1818), the *Pennsylvania Academy of Fine Arts* (established in 1807), the *National Academy of Design*, at New York (founded in 1828); the *Medical Academy* of New York. The *National Academy of Sciences* was incorporated by Congress, March 3d, 1863. In New York, Philadelphia, Brooklyn, Chicago, and other large cities, the principal opera house is called the *Academy of Music*.

ACCOMPLISHMENTS. This term, as contrasted with *culture*, refers to those educational acquirements which fit a person for certain special activities, while culture has reference to the general improvement of the character or mental faculties. Hence the expression "external accomplishments," or "ornamental accomplishments," such as skill in foreign languages, music, drawing, painting, dancing, etc. Involved in this application of the term, is the idea of display, or the ability to please, or the power to awaken admiration in the beholder. Thus in the *Spectator* we find the expression "the visible graces of speech and the dumb eloquence of motion," as indicating the accomplishments of a pleasing address and a graceful carriage.

Accomplishments are either purely intellectual, as that of language, or partly or wholly artistic, such as music, drawing, dancing, etc. In the education of boys, fencing and boxing were formerly considered as indispensable accomplishments; but of these, at the present time, rowing seems to take precedence, as contributing to a healthy development of the physical system.

In many classes of schools. particularly in private seminaries. the acquisition of certain ornamental accomplishments constitutes the chief end of education. Were these accomplishments based on a solid culture of the intellectual and moral nature. they would be very proper and desirable: but being merely showy and superficial. they constitute a perversion of the true end of education. Thus Hannah More remarks: "In training our daughters. should we not carefully cultivate intellect. implant religion. and cherish modesty? Then, whatever is engaging in manners would be the natural result of whatever is just in sentiment and correct in principle. Softness would grow out of humility. and external delicacy would spring from purity of heart." The folly and wrong of giving this exclusive attention to mere accomplishments have very frequently been a subject of satirical invective. Says Sydney Smith: "A woman of accomplishments may entertain those who have the pleasure of knowing her for half an hour with great brilliancy; but a mind full of ideas. and with that elastic spring which the love of knowledge only can convey, is a perpetual source of exhilaration and amusement to all that come within its reach. Therefore. instead of hanging the understanding of a woman upon walls. or hearing it vibrate upon strings. instead of seeing it in clouds. or hearing it in the wind, we would make it the first spring and ornament of society, by enriching it with attainments, upon which alone such power depends." Goldsmith also inveighed severely against this practice in his time. "Another passion," he says, "which the present age is apt to run into is, to make children learn all things,—the languages, the sciences, music, the exercises, and painting. Thus the child soon becomes a talker in all, but a master in none. He thus acquires a superficial fondness for everything, and only shows his ignorance. when he attempts to exhibit his skill." The tendency of the present time, in what is called fashionable education, is equally subject to the same unfavorable criticism. Accomplishments, in the first stages of education, are to be regarded as secondary to the solid improvement of the mind. Those rudimentary attainments which constitute the basis of all school education, and are indispensable to any further progress, namely, reading. spelling, writing. and arithmetic, must of course be made; to which should be added the ability to use one's own language, in speaking and writing, with tolerable ease and propriety. A common-school education should give great prominence to these, as not only constituting the acquirements most generally needed for success in life, but as placing in the hands of the pupils the keys to future progress in learning.

Accomplishment, being derived from the French *accomplir*, to finish or complete, may be contrasted with *smattering*, a mere superficial acquirement of some of the prominent or rudimental parts of any subject. No educational scheme should admit of the study of any branch of knowledge which cannot, under the given circumstances and in the time proposed. be accomplished so as to give the pupils who are to pursue it. a thorough knowledge of the subject. as well as the ability to apply it to some practical purpose. The peculiar talent. or bent of mind, of children should be regarded. in the attempt to bestow upon them ornamental accomplishments, such as music and drawing. except such elementary portions of these arts as are within the capacity of all. and which constitute. not indeed special accomplishments, but a part of that general culture which the most elementary education should bestow. (See CULTURE.)

ACQUISITION. The acquisition of knowledge must be. to a certain extent. the scope of every process of teaching. Sometimes it is the primary object; but. in the earlier stages of education. it is generally secondary. the educative value of the process taking precedence of the practical importance of the knowledge communicated. The acquisition of new ideas must always, more or less. improve the mind by affording additional material for the exercise of its various faculties; but, in education, what particular faculties are concerned in the study of any subject or branch of knowledge, is a matter of paramount importance, and therefore should never be lost sight of by the teacher. Where this is disregarded. instruction is apt to degenerate into mere rote-teaching; and the teacher will often rest satisfied when his pupil can repeat the formulæ of knowledge. without evincing the acquisition of new ideas. on which alone the improvement of the mind depends.

ACROAMATIC METHOD (Gr. *ἀκροαματικός*, to be heard, designed for hearing only). a name originally applied to the esoteric teachings of Aristotle and other Greek philosophers, to designate such as were confined to their immediate hearers. and not committed to writing. Later, the term has been applied to a system of instruction in which the teacher speaks and the pupil only listens. A method of this kind, of course, presupposes scholars of a certain maturity of age and of considerable progress in intellectual culture. It forms the basis of the lecture system. (See LECTURE.)

ADAM, Alexander, LL. D., was born in Scotland. in 1741. and died in 1809. He attained a high distinction as a teacher while Rector of the High School at Edinburgh (1768—1808). He was also the author of several educational text-books. among which his *Roman Antiquities* (1791) has been very extensively used in this country and in Great Britain.

ADAMS, John, LL. D., was born in Canterbury, Ct., in 1772. and died in Jacksonville. Ill., in 1863. He was noted both as a teacher and a philanthropist. After graduating at Yale College, in 1795, he taught the academy in his native town, and subsequently other schools. till. in 1810, he became principal of Phillips Academy, Andover, Mass., in which position he continued for twenty-three years. In 1833, he removed to Illinois, and was very active in effecting improvements in the school system of that

State. His labors in connection with various benevolent institutions in both States, were numerous and important. Through his efforts, a large number of Sunday-schools were established in his adopted State. Many essays and other publications on education attest the intelligence and ability with which he devoted himself to the training of the young.

ADRIAN COLLEGE, at Adrian, Mich., was founded in 1859, by the Methodists. The number of students is about 200, males and females, about one fourth of whom belong to the collegiate department. It has a classical and a scientific course of instruction, a school of theology, a school of music, and a normal class. Its corps of instructors numbers twelve, and it has one endowed professorship. The number of volumes in its library is about 1000; its endowment is $100,000. Rev. G. B McElroy, D. D., is the president of the Institution (1876). The tuition fee is very small.

ADULTS, Schools for. The proper time to obtain instruction is during the periods of boyhood or girlhood, and youth. (See Age in Education.) It is in the interest of states as well as of families and individuals, that, as much as possible, every child, not prevented by physical disabilities, should have its share in the instruction provided by public legislation and private effort. The majority of states have even deemed it a duty to make education compulsory, in order to render it universal. (See Compulsory Education.) It is also the general tendency of educational legislation to extend the legal school age to the utmost, in order to make the education of the school population as thorough as possible. (See School Age.) Still, though boyhood and youth are the proper ages for instruction, the need of special schools for adults has always been deeply felt. Though modern legislation has succeeded in some countries in almost wholly extinguishing illiteracy (see Illiteracy), the number of adults whose education, during the proper age, has either been entirely insufficient, or who find themselves on entering life, without the requisite amount of information specially needed in their several avocations, remains as great as ever, and is even likely to increase, as the standard of popular education becomes more elevated. Systematic reading, instruction by private teachers, and, more recently, popular lectures, are among the principal agencies for supplementing the deficiencies of school education. Efforts have, however, not been wanting in many states to establish schools for adults for the special purpose of giving to those who have left the public schools and entered into practical life, a suitable opportunity to supply the deficiency of their school education. Many German states began in the 18th century to establish Sunday-schools in which, besides religious education, a review of the instruction given in the elementary school was provided for. As the school age, in the German states, only extended to the 14th year, a Sunday-school was specially provided for boys and girls to the 16th or 18th year of age. Several states made attendance at these schools obligatory for all boys and girls who had left the elementary school and not entered any higher school. Special attention has been given to schools of this class in Austria, where the government has established "reviewing schools" (*Wiederholungsschulen.*) (See Austria.) As the ordinary Sunday or reviewing school was found to be insufficient, especially for young mechanics, special classes or schools were organized in which particularly instruction in drawing was given. The attendance at these schools is always voluntary; in most of them the scholars have to pay moderate fees; instruction is generally given on Sunday mornings, and, in most schools, is confined to writing, arithmetic, and drawing. In some of the German states, especially in Würtemberg, an evening school on week-days has been added to the Sunday-school; and thus a great impulse has been given for the further development of industrial schools for adults. (See Industrial Schools.) The Schools for Adults established in other European countries are mostly evening industrial schools. In the United States, evening schools have been very extensively introduced, to give to all adults an opportunity of obtaining the same education as children receive during the day; and some of the larger cities afford in these evening high schools instruction in the studies of a higher grade. (See Evening Schools.)

ADVENTISTS. This is the name of several organizations of American Christians, the distinctive doctrine of whom is the belief in the speedy second advent of Christ, and the end of the world. In 1875, there were four different organizations: (1) The Advent Christian Association; (2) The American Millennial Association (Evangelical Adventists); (3) The Life and Advent Union; (4) The Seventh Day Adventists. The churches of this denomination were formerly almost wholly independent, and had fewer church boards for common interests than most of the other religious denominations of the United States. The greatest advance in point of organization has been made by the Seventh Day Adventists. The subject of education and the founding of a denominational school was brought to the attention of the members of this denomination by Elder James White and wife, in the early part of 1872. The matter was referred to a General Committee, who, during the summer and autumn of 1873, solicited subscriptions to this enterprise, obtaining pledges for over $54,000. On the 16th of March, 1874, an association was formed, under the law of Michigan, "for the incorporation of institutions of learning;" and a school edifice, capable of accommodating between four and five hundred students, was finished in 1875.—See *Annual Cyclopedia*, 1875, art. *Adventists;* also *Seventh Day Adventists; a brief sketch of their Origin, Progress, and Principles* (Battle Creek, 1874).

ÆSTHETIC CULTURE. See Esthetic Culture.

AFFECTATION, as opposed to what is real, genuine, and natural, is carefully to be guarded against in the education of the young. In certain peculiarities of character, there is a proneness to the formation of habits of affectation in manners and speech. This tendency, however, rarely shows itself at an early age. Children generally yield to their natural impulses, and do not assume or feign what they do not feel, or, to use a common expression, "put on airs." Their mode of training, however, may tend to this, particularly if they are forced to assume an unnatural mode of expression in phraseology or pronunciation, in the attempt to make them excessively precise in such matters. Some styles of reading and elocution may lead to this characteristic; and hence the importance of adopting methods that, in all respects, correspond to the prevailing usage. Certainly, nothing can be more disgusting than the forced imitation of peculiar and unnatural models of conceived propriety of speech and manners, which we sometimes find to prevail among the pupils of certain schools, or the "mincing airs" which are often assumed by those, both male and female, but particularly the latter, who affect to belong to the best society, and hence arrogate to themselves a superior degree of refinement. The standard of the educator should be, in every respect, that ease, grace, simplicity, and beauty that belong to what is natural; and every tendency to the contrary, in his pupils, should be promptly and sternly repressed. Locke says: "Plain and rough nature left to itself, is much better than an artificial ungracefulness, and such studied ways of being ill-fashioned. The want of an accomplishment, or some defect in our behavior, coming short of the utmost gracefulness, often scapes observation; but affectation in any part of our carriage, is lighting up a candle to our defects, and never fails to make us to be taken notice of, either as wanting sense or wanting sincerity."— See LOCKE, *Thoughts concerning Education.*

AGASSIZ, Louis John Rudolph. This eminent naturalist and teacher was born at Motiers, near Neufchatel, in Switzerland, May 28., 1807, and died at Cambridge, Mass., Dec. 14., 1873. His ancestors were Huguenots, driven from France by the revocation of the edict of Nantes. His father was the pastor of a protestant parish; his mother, the daughter of a physician. Under the latter he received his first education till the age of eleven, when he was sent to the gymnasium at Bienne, where he remained four years. His subsequent studies were pursued at the college of Lausanne, the medical school of Zurich, and the universities of Heidelberg and Munich. At the latter place, he particularly distinguished himself for his attainments in natural history. At Paris, he made the acquaintance of Humboldt and Cuvier, both of whom held him in high esteem for his talents and scientific acquirements. In 1846, he came to the United States, being invited to deliver a course of lectures at the Lowell Institute, in Boston. The next year, he accepted the appointment of professor of zoölogy and geology in the Lawrence Scientific School, then just established. He commenced his duties in 1848, and settled permanently in the United States, where his greatest fame was achieved by his numerous labors as a naturalist and a scientific lecturer and teacher. The establishment of the Anderson School of Natural History on Penikese Island in 1873, was almost the last act of his life. The means for founding this school were furnished by Mr. John Anderson, a generous and public-spirited citizen of New York, who not only devoted for this object the island of Penikese, but the sum of $50,000, as a permanent endowment. Agassiz had long advocated the establishment of such a school for the special instruction of teachers in marine zoölogy; and during the summer of 1873, he devoted his time and energies to this institution, being present at every exercise and lecture, and the constant companion of the students. His chief publications were *Recherches sur les Poissons Fossiles*, 1833—1844; *Études sur les glaciers*, 1840; *Système glaciaire*, 1847, and *Contributions to the Natural History of the United States.* Though chiefly eminent as a naturalist, and particularly in the department of ichthyology, he was an accomplished linguist, being versed in six languages. He read Plato and Aristotle in the original, wrote several works in elegant Latin, and was a good Hebraist. French and German were to him vernacular tongues, and he could speak and write the English language with ease and correctness. He was a natural teacher, fond of giving instruction, patient and sympathetic, overflowing with an earnest love for his subject, and having a mind replete with stores of information. His voice, look, and manner at once gained the attention of his pupils; and the clearness of his explanations as well as the fluency of his delivery gave interest to every subject upon which he spoke. His skill in ready graphic delineations with chalk and blackboard was astonishing, and greatly contributed to the effectiveness of his teaching. Few have ever made such rich additions to the stores of science, or have been more zealous in diffusing the benefits of knowledge among mankind. His example as a teacher has been of very great value, since his system was to teach from natural objects rather than from books,—to enable the pupil to acquire an experience of his own before presenting to his mind the results of the experience and observation of others. His own assumed title, "Louis Agassiz—Teacher," was the one of which he seemed to be most proud: and all teachers should cherish the example which he set, as the true means of success.

AGE, in Education. The life of man has been variously divided into periods, or ages. Thus Pythagoras assumed four, Solon and Macrobius ten, different ages, while others have preferred a division into five, six, seven, or eight. With regard to the education of man, one great turning point stands forth so conspicuously, that teachers at all times have chosen it as a broad line of demarcation, into whatever number of periods they have thought it proper to divide human life. This turning-point in life is the period when man passes from the age of youth into that of virility. The physical development at this time has become complete; in social life both sexes have attained majority; and the education of the young man or woman for the career that has been selected, is, in the main, concluded. Up to this time, the education of man is conducted by others, chiefly parents and teachers; henceforward, he is expected to educate himself, and to assume the education of others.

During the period of life when man is dependent upon others for his education, three different ages are broadly distinguished,—childhood, boyhood or girlhood, and youth. These are marked, in the physical development of the body, by the shedding of teeth, the entrance of puberty, and the setting in of virility. The process of mental development in these three ages is as different as the physical basis; and, accordingly, each of them demands a peculiar pedagogical and didactical treatment.

Childhood, which embraces the first seven years of life, is characterized by the rapid growth and development of the organs of the body. At the age of seven a child weighs about six times as much as at its birth, and it has attained one half of the stature, and about one third or one fourth of the weight of the grown man. The mind is, during this period, more receptive than self-active; the only manifestations of self-activity being found in the efforts to retain and arrange the impressions which have been received. All pedagogical influence upon the pupil in this age can be only of a preparatory character. The body must be guarded against injuries, and must have opportunities for a vigorous and manifold development. The mind must be preserved from debasing, weakening, or over-exciting influences, and must be kept open for any thing that is conducive to the development of its faculties; and, in order not to become sated and confused, it must learn to distinguish what is important from the less important. As the child is thoroughly dependent upon its educator and unable to direct its own exertions, it should be made to understand as clearly as possible, that any opposition of its own will to that of its educators can be followed by only evil consequences. It should, therefore, be taught obedience, but not obedience through fear, for fear has a repressive influence upon the development of the mental faculties, but an obedience springing from confidence in the superior wisdom and experience of the teacher, and from love produced by his kindness. The natural educators of the child are the parents, especially the mother; but, toward the close of this age, systematic teaching by a professional teacher begins. Legislation in regard to the school age differs considerably in different countries. In some, children are sent to the public schools when they are four years of age; in others, not until they are seven. (See SCHOOL AGE.) Of course, instruction at such an age must be limited to the most elementary rudiments, such as reading, writing, and arithmetic. The method should be thoroughly adapted to the mental condition of the child, and modern educators are agreed in recognizing the importance of object teaching for the first stages of a child's instruction. A novel mode of instruction, specially intended as introductory to the regular primary school, is the kindergarten, founded by Frœbel. The astonishing rapidity with which it has spread through all the countries of the civilized world, and found admission into educational systems otherwise radically at variance, seems to prove it to be a great improvement in elementary education. (See KINDERGARTEN.)

Boyhood or *girlhood* embraces the time from the 7th to the 14th year of age. In the development of the body, this age is characterized by the appearance of the permanent teeth, by the completed growth of the brain, and by the first consciousness of sexual difference. Boys and girls long for the free and frequent exercise of their muscular systems. At the beginning of this age, girls like to take an active part in the plays of the boys; but they soon show a preference for more quiet occupations and less publicity; while, on the other hand, boys manifest an increased interest in noisy and wild sports. It is among the prime duties of the educators of this age, to keep the development of the natural desires and aspirations of the two sexes within the right channels. The minds of boys and girls afford many proofs of independent thought and activity. The company of adults is not sought for by them as eagerly as before, but they feel entire satisfaction in the society of children of their own age. They think, as yet, little of the realities of life and of their future careers; but their plays give more evidence, than before, of plan, serious thought, and perseverance, and generally indicate the faculties with which they have been most strongly endowed; each child, in this way, foreboding to some extent its future career. It is of great importance that the educator should not only understand the peculiar nature of this age in general, but that he should thoroughly know the character of each individual; for the faults which are peculiar to this age are best overcome in individual cases, if the educator knows how to make the right kind of appeal to those good qualities of his pupils which are most strongly developed. In arranging a course of instruction for this age, it must be specially remembered that the minds of boys and girls are predominantly receptive. The memory readily receives and faithfully retains impressions; and this, therefore, is the right time for learning a foreign language and geographical and historical facts. The independence of mind peculiar to this age shows itself at the same time in the growth of imagination, which awakens in the boy a lively interest in all that is great and extraordinary in history. On many questions relating to the education proper for this age, educators still differ. Prominent among these questions, are, whether the two sexes should be educated separately or conjointly, to what extent the same course of instruction should be prescribed for both, whether special studies should be begun at this age, or whether the entire course should be obligatory for all the children of a school. (See Co-education of the Sexes.)

The age of *youth* extends from the beginning of puberty to the complete development of sexuality, or from the fourteenth to about the twenty-first year of age. At this time the growth of the body is completed; young men and women become aware of their special duties of life and of the difference in the careers upon which they are respectively to enter. The time of study is drawing to its close; the entrance into active life is at hand. Among the lower classes of society, this transition occurs at the beginning of this age; and the only increase of knowledge that is accessible to most persons of these classes must be derived from evening schools, public lectures, and reading; while those of the wealthier classes, and all who wish to fit themselves for any of the learned professions, now enter upon the special studies of those professions, or finish the general studies of the preceding age. Toward the close of this period, if not earlier, the preparations for entering public life are completed, or an actual entrance into life begins.—See Schwarz, *Erziehungslehre;* Schleiermacher, *Erziehungslehre*, edited by Platz; Beneke, *Erziehungs- und Unterrichtslehre;* Herbart, *Umriss pädagogischer Vorlesungen.*

AGRICOLA, Rodolphus, an eminent educator of the middle ages, was born in August 1443 (or 1442) at Baflo, near Groningen, in Holland. His original name was Huysmann, which, after the custom of his time, he exchanged for a Latin name. After his native province, Friesland, he is also sometimes called Frisius. He studied at the universities of Louvain, Paris, and Ferrara; and, after returning to his native country, distinguished himself greatly by introducing the study of Greek into the countries north of the Alps. In 1483, he accepted an invitation from his friend, Bishop Dalberg of Worms, and delivered lectures alternately at Heidelberg and at Worms. He died in Heidelberg, Oct. 28., 1485. His works, which are not very numerous, are written in Latin. His principal work *De inventione dialectica* attacks the scholastic philosophy of the age. In an educational point of view, his epistle to Barbirianus in Antwerp, the so-called *Epistola de formando studio*, is of special importance. At the time of its publication, it was regarded as a compendium of the pedagogical views of the German humanists. Its prime object was to advise his friend as to the continuation of his studies. Agricola recommended philosophy, by which term he understood also ethics and physics, and, in general, the entire range of natural science, as the study most deserving his friend's attention; he represents it as the only road to true knowledge and perfect felicity, while the other sciences could procure only a doubtful happiness. The Latin language was regarded at that time as necessary for this study, but Agricola advised his friend always to reproduce what he had learned in German. Three things were needed for pursuing any study: (1) To understand what had been learned; (2) To retain what had been understood; (3) To derive advantage from what had been learned. The first was obtained by application, the second was the gift of memory, the third could only be acquired by practice. While the works left by Agricola would alone not suffice to assign to him a prominent place among the educators of the middle ages, it appears from the writings of his contemporaries that his personal influence was very great, and that, in fact, he was regarded as second to none but his friend Reuchlin. His letters to Reuchlin, to Alexander Hegius, an excellent educator, who founded the famous school of Deventer, to Antonius Liber of Soest, a very zealous humanist, who, after fruitless efforts to establish a school at Emmerich, Kampen, and Amsterdam, at length succeeded at Alkmaar, where he died in 1514, and to other contemporaries, contain a large amount of information on the educational movements of his times. A complete edition of the works of Agricola has been published by Alardus, of Amsterdam (Cologne, 1539).—See Schmidt, *Geschichte der Pädagogik*, II, 452; Raumer, *Geschichte der Pädagogik*, trans. in Barnard's *German Educational Reformers;* Geiger, in *Allgemeine Deutsche Biographie*, I, 151 — 156; Tresling, *Vita et merita Rudolphi Agricolæ* (Groningen, 1830); Hallam's *Literature of Europe.*

AGRICULTURAL COLLEGES. It is only within the last fourteen years that any general and systematic effort has been made in the United States to furnish facilities for acquiring a thorough scientific and practical education in agriculture. In 1862, Congress gave to the several states and territories land scrip to the amount of 30,000 acres for each senator and representative in Congress, provided that each state or territory, claiming the benefit of this act, should, within five years from its passage, "provide not less than one college, which should receive for its endowment, support, and maintenance the interest of all moneys derived from the sale of the aforesaid scrip or lands." It was further required that "the leading object" of these colleges "should be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes, in the several pursuits and professions of life." The main supporter of this law was the Hon. Justin S. Morrill, senator from Vermont. Of all laws enacted, either state or national, for the advancement of higher education, no one has ever been productive of such fruitful results. The originators and framers of this law, "builded better than they knew." The tabulated statement below, while it shows a vast amount accomplished in a short space of time, cannot, of necessity, give more than a faint idea of what has been done in advancing agricultural education in the single direction of a systematic and thorough collegiate training. Looking back over the last ten years, we notice that those engaged in agriculture have made marvelous progress in general information, as well as in technical subjects having a direct bearing upon their special calling. This has been largely brought about by the munificent endowments of Congress. For as soon as the act had become a law, numerous energetic and far-seeing men brought the matter prominently before the several state legislatures, setting forth the great benefits that would arise from an acceptance of the donation. Some strenuously opposed its acceptance, as it would add heavy burdens, in order to furnish buildings etc., to those already imposed by the war; and others opposed it, believing the whole scheme to be chimerical and impracticable. Through these discussions, which have not yet wholly ceased, much valuable information has been disseminated; and the effect has been, to arouse thoroughly the agricultural classes to a sense of their rights and duties. These earnest and continued discussions have developed latent talents, and excited a desire for information among the farmers, that is, as yet, only partially gratified. They have made it possible to publish and sustain numerous agricultural journals with regular contributions from the pen of many of the ablest writers on the practical and scientific subjects of the day. They have created such a demand for agricultural literature, that a large proportion of our religious and political journals devote more or less space to the subject. These are but a few of the incidental results of this wise and munificent act of Congress; and they are none the less real or beneficial, although they cannot be tabulated or set forth in long columns of figures. Such rapid strides have been made in some directions within the last few years, that a chemist and a laboratory have become a necessary adjunct to many of the agricultural industries,—notably to that of the manufacture of cheese, butter, and commercial fertilizers. Up to 1865, the agricultural college of Lansing, Mich., was the only one in the United States in which students could pursue a college course arranged and adapted to meet the wants of those who might desire, in after years, to engage in agriculture. Since that time, some thirty colleges have been organized—about one half of them from parts of universities—which are largely devoted "to teaching such branches of learning as are related to agriculture and the mechanic arts." The donation of lands by Congress did not furnish endowment sufficient fully to equip and man these numerous institutions; but it afforded the means to lay the firm foundations upon which, aided by state and individual munificence, have been reared many noble institutions of learning, which are doing an important and much-needed work. We can hardly conceive of the grand and important position these institutions are to occupy when the wants of an increased population shall furnish a demand for the products of the soil at prices sufficiently remunerative to induce many trained and educated men to embark in agriculture.

It is difficult to give an exact statement of the present condition of agricultural colleges, since they are only a part of colleges or universities devoted also to teaching mechanic arts, and scientific and classical studies more or less germane to agriculture. We find that, in this department, and in that of mechanics, there are at present about 300 professors and teachers. So far as reported, 361 students have graduated after a full course in agriculture. According to the usual proportion of freshmen to graduates, this would indicate that 1,444 had pursued the course for a longer or a shorter period. The number of graduates who during their course have, to use the phraseology of the act of Congress endowing these institutions, pursued studies "relating to agriculture and the mechanic arts," is 669; making the total number who have entered these courses, for a longer or a shorter period, 2,676. The number of students, as far as reported, in all the departments of the institutions named, is 6,907, of whom 715 are ladies, and 2,889 are receiving instruction in military tactics. The minimum cost of board—usually in clubs—is $1.25 per week; the maximum cost, $5.00; and the average, $3.00. The cost of room rent per term ranges from $1.33 to $12.00. In all but two or three institutions, some provision is made for a greater or less number of free scholarships, and several offer free tuition for all. As a general rule, no pains have been spared by these colleges to furnish all the facilities for pursuing a college course at the least possible expense. Manual labor is required in 11 of the colleges; in the others, it is optional. The price paid for students' labor ranges from 5 to 18 cents per hour. State appropriations have been made of nearly one and a half million of dollars, which have been largely used for erecting buildings. The amount of private donations it is impossible to arrive at accurately, but they cannot fall short of $5,000,000. The late Ezra Cornell gave $700,000 to the university that bears his name, and the total amount of private donations to this single institution is not less than $1,400,000, of which the colleges of agriculture and the mechanic arts have received their due proportion. The number and equipment of laboratories, workshops, etc., in the colleges that serve, directly or indirectly, to illustrate and teach subjects relating to agriculture, are as follows: mechanical laboratories or workshops, 10, all of which are furnished with tools for working in iron and wood, and several with engines, planers, turning-lathes, drilling-machines, saws, and other necessary but less expensive tools; physical laboratories, 16, most of which are furnished with apparatus for illustrating the subjects of mechanics, electricity, magnetism, heat, acoustics, and optics. All, with one or two exceptions, have well equipped chemical labaratories; and several of them furnish facilities for instruction in chemistry not excelled in any other institutions in the United States. Nine anatomical, 12 geological, and 15 botanical laboratories are already equipped for student practice. Eight of these colleges have greenhouses in operation; most of them have drafting-rooms, with the necessary tables and models for illustrating the subjects taught. A large amount of practice in drawing is, moreover, required in several of the branches related to agriculture. Free-hand drawing, as yet, has not been largely introduced. Some ten colleges have large collections of models of farm implements and machinery; engravings, photographs, charts, and drawings; together with numerous specimens of grains, grasses, and other plants; geological and mineralogical specimens; collections of insects and skeletons of domestic and other animals; all constituting what might be called an agricultural museum, though usually kept in separate rooms for the sake of convenience. Ten of these institutions offer one or more prizes for good scholarship; six report, through their leading officer, that the effect of offering such prizes appears to be "good;" six consider it "bad;" two, "doubtful;" one, "that it depends on circumstances;" one, that it is "a healthy stimulant to be carefully used;" and one, "*non constat.*" At least twelve appear to have kept careful accounts of farm receipts and expenditures; but since we have no reports of the amount of increase in the valuations of farm-stock, implements, etc., it is impossible to say whether the farms are worked at a profit or a loss. The total gross receipts of twelve farms reported, for 1874, are $64,329.60, or an average of $5,360.80 per farm. The total expenditures for experiments during the same year, on eight of these farms, are $8,143.26. This indicates that farm experiments are not, as yet, carried on to any great extent; and the reason for this is, doubtless, a lack of means rather than of disposition. Every professor of agriculture fully appreciates the benefit, not only to his class but to himself as well, of extended and systematically conducted experiments. They are, indeed, effective but costly auxiliaries to the class-room lectures. There is a constantly increasing tendency toward using the farm and its appliances, regardless of profit or loss, in order to teach and illustrate the principles of agriculture, rather than—as has too often been the case—using it simply as a means of increasing the common fund. The aggregate number of acres used for general and experimental farming by twenty of these colleges is 5,081; added to which there are 142 acres of orchard, 92 acres of vegetable garden, 29 acres of small-fruit garden, 1,360 acres of native timber, 438 acres of planted timber, and 580 acres used as college grounds. Though we find that the planted timber is about six acres to each hundred of arable land,—which is certainly a very creditable showing,—yet forestry is taught to but a limited extent, there being no distinctive course yet marked out in that branch of study. We are far behind some of the European countries in our facilities and methods for training students in the art and practice of the care, preservation, and planting of forests. As a part of the equipment for illustration and practice on these farms are found some 500 head of neat-cattle, 236 of which are thorough-breds, representing nine distinct breeds. The horses and mules number 129, only 3 of which are thorough-breds; the total number of sheep is 233, of which 58 are pure bloods of various breeds; the swine exceed 500, including about 400 pure-bred animals, representing nearly all of the well-established breeds. This aggregation of laboratories, workshops, museums, greenhouses, orchards, gardens, farms, and domestic animals is furnished and provided for the express purpose of affording, not only the means for illustrating the subjects taught, but actual experience and skill in those processes which require that the judgment, eye, and hand, as well as the intellect, should be trained.

The propriety and expediency of the Congressional grant by means of which these institutions have been established, have been seriously called in question; indeed, it has been held that the function of government should be strictly confined to the promotion of elementary instruction. In 1873, President Eliot, of Harvard College, took strong ground against the endowment, by the Government, of institutions for superior or technical instruction, and was sustained in this view by President McCosh and others. At the session of the National Educational Association, held at Elmira, N. Y., in August, 1873, this question was considerably discussed, and the principle underlying the endowment of the agricultural colleges was ably vindicated in a paper by Prof. G. W. Atherton, of New Jersey, entitled *The Relation of the General Government to Education*, in which he said, "These younger institutions have a larger average of students, by more than one-tenth, than the long-established colleges, and are fairly occupying with them the field of higher education. In an important sense, however, they are not the rivals of the older colleges. Their graduates, to only a limited extent, enter the learned professions. They become engineers, farmers, mechanics, architects. They labor with hand and brain. They become leaders and organizers of labor, and thus precisely fulfill the intent of Congress when it designed these institutions to furnish a 'liberal and practical education to the industrial classes.'" Prof. Atkinson, on the same occasion, took similar ground. "What," said he, "is the government domain but the property of the people, and to what higher use can the people put it than to promote the higher as well as the lower education of all the people? We have in this country no aristocracy of education—not one education, as in the old country, for the 'masses,' and another and higher one for the privileged minority. The republican principle is, the best education for all—the best and highest education for the 'masses.' That is the only principle on which republican institutions can be founded." The words of Washington fully justify this principle: "In proportion as the structure of a government gives force to public opinion, it is essential that public opinion should be enlightened."

Course of Study.—The full course of four years in agriculture comprises the following subjects: (In some cases, a few are omitted or a few added; but those mentioned will serve to show what studies are now generally considered applicable and necessary in this course)—(1) algebra; (2) solid, plane, and analytical geometry, trigonometry, and the calculus; (3) rhetoric and composition, declamation and English literature; (4) drawing, free-hand and linear; (5) surveying and mapping; (6) book-keeping, especially applied to farm accounts; (7) botany, general and agricultural; (8) horticulture, floriculture, and general, market, and landscape gardening; (9) history, which may comprise one or more of the following: American, English, Roman, French, agricultural, and history of civilization; (10) physiology, hygiene, and comparative anatomy, (11) zoölogy and entomology; (12) veterinary anatomy, physiology, medicine, and surgery; (13) chemistry, general and agricultural; (14) French and German, usually extending through not less than two or three terms (when both languages are not required, German is usually preferred); (15) physics, geology, mineralogy, and meteorology: (16) constitutional and municipal law and political economy; (17) mechanics applied to agriculture; (18) strength and preservation of materials; (19) rural architecture. The subjects treated of under the head of applied or practical agriculture—with slight changes—are as follows: (1) stock-breeding, including the laws of likeness or similarity, variation and atavism; the influence on the subsequent progeny of the dam, by the first fruitful connection, in-and-in and miscellaneous breeding, the government of sex, the relative influence of sire and dam on the progeny, pedigrees and their value, the history, formation, and characteristics of breeds and families; (2) the selection, breeding, feeding, and general management of domestic animals, each species and race being treated of separately; (3) annual nutrition; (4) the education, shoeing, driving, and care of the horse; (5) drains,—their material and construction, and the effect of drainage on health, soil, climate, and plants; (6) soils,—their classification, character, mechanical division, and preparation for the cereals and grasses; (7) the preparation and selection of seed; (8) sowing, planting, cultivating, and harvesting; (9) the nutrition of plants; (10) insect enemies and fungi; (11) the culture of roots and their value as food for man and beast; (12) forage plants,—their culture, use, and value; (13) weeds,—their habit of growth, time of seeding, and mode of eradication; (14) the effects of air, water, heat, and light, on the fertility of the soil and the growth of plants; (15) the care, cultivation, and use of natural and artificial forests; (16) fields,—their number, shape, and size; (17) fences,—their material, construction, and durability; (18) farm yards and buildings; (19) water privileges; (20) farm accounts; (21) the manufacture, preservation, and application of farm manures; (22) the rotation of crops; (23) farm machinery and tools; (24) rural law. The subjects of instruction, as far as possible, are illustrated by diagrams, cuts, and models. The lectures are supplemented by field practice, varying from 5 to 15 hours per week, and sometimes even more. Visits are frequently made to adjoining farms and herds. The lectures and practice usually extend through at least one year. The foregoing statement shows conclusively that there has been an earnest, systematic, and *successful* effort to promote the education of the rural classes; and it may be truthfully said, that, within the last ten years, no other department of education has made an equal degree of advancement.

The first agricultural school in Europe was founded, in 1804, by Fellenberg, at Hofwyl in Switzerland. It flourished for more than 30 years under the excellent direction of Wehrli, and educated nearly 3,000 pupils. The success of Hofwyl led to the establishment of other schools of the same character; and, at present, such schools are found in every country of Europe. They are very numerous in Germany and Austria, and are divided into two classes,—a lower, called *Ackerbauschule*, intended chiefly to give practical instruction in agriculture, and a higher, called *Landwirthschaftsschule*, in which the whole science of agriculture, with all its auxiliary sciences, is taught. The most celebrated among the schools of a higher class are those at Hohenheim (established in 1818), Schleisheim (1822), Jena (1826), Eldena (1835), Wiesbaden (1836), Tharand (1829), Regenwalde (1842), Poppelsdorf (1846), Proskau (1847), Ungarisch-Altenburg (1818). Special chairs of agriculture have been established at the universities of Berlin, Halle, Göttingen, Munich, Leipsic, Giessen, and Jena; and instruction in agriculture is also given in the polytechnic schools. England has a Royal Agricultural College at Cirencester, founded in 1849; and in Scotland, the University of Edinburgh has a chair of agriculture, and special lectures are given in a college at Aberdeen. Ireland has two agricultural schools of a higher grade,—one at Templemoyle, founded in 1827; and the other at Glasnevin, founded in 1838. France has three higher agricultural schools and one school of forestry. In Italy, there are two agricultural schools of a higher grade, at Milan and Portici. Russia, besides a large number of schools of agriculture and forestry of a lower grade, has an Agricultural Institute at Gorygorezk, founded in 1836, an Institute of Agriculture and Forestry at New Alexandria, and an Academy of Agriculture and Forestry at Petrovskoi. See Loebe, *Die landwirthschaftlichen Lehranstalten Europa's* (Stuttgart, 1849); Schulz, *Die theoretisch-praktische Ackerbauschule* (Jena, 1869).

In the following tabular exhibit, will be found a full statement of the location, condition, resources, etc., of all the agricultural colleges and departments in the United States.

STATE	TOWN	Name and location of institution, and date of organization	Name, title, and age of president	No. of profs. in Agr. & Mech. Colleges during last collegiate year	No. of students graduated in a full course in Agriculture	No. of students graduated who, during their course, pursued studies "relating to Agr. & Mech. Arts"	No. of students in the entire institution	P denotes preparatory department connected with the institution
Arkansas	Fayetteville	Ark. Indus. University, Jan. 1871	N. P. Gates, A. M., 42	10	0	15	344	P
Alabama	Auburn	Agr. & Mechan. Coll. of Alabama, March 1872.	Rev. I. F. Tichenor, D. D., 49	5	0	15	88	P
California	Oakland	Univ. of California, Fall of 1869		20			312	
Connecticut	New Haven	Yale Coll. — Sheffield Scientific School, 1846	Rev. Noah Porter, D. D., LL. D	35	54*		230	
Delaware	Newark	Delaware College	Wm. H. Purnell, A. M.	10				
Florida	—	Florida State Agr. Coll.	(Not yet organized.)					
Georgia	Athens Dahlonega	Univ. of Georgia. Coll. of Agr. & Mech. Arts	Rev. A. Lipscomb, D. D.	11			250	
Illinois	Champaign	Ill. Indus. University, March 1868	John M. Gregory, LL.D., regent	29	22	123	407	P
Indiana	La Fayette	Perdue Univ., September 16th, 1874	A. M. Shortridge, A. M., 42	1	0	0	56	P
Iowa	Ames	Iowa State Agr. Coll. '68	A. S. Welch, LL. D., 53	13	40	80	277	P
Kansas	Manhattan	Kansas State Agr. Coll.	Rev. Joseph Denison, D. D.		**			
Kentucky	Lexington	Agr. & Mechan. Coll. of Kentucky, 1866	J. B. Bowman, LL. D., regent	13	0	0	113	P
Louisiana	—		Not yet organized.)					
Maine	Orono	Maine State Coll. of Agr. & Mech. Arts, 1869	Rev. C. F. Allen, D.D., 59	8	4	37	115	
Maryland	Near Hyattsville	Maryland Agr. Coll., '68	W. H. Parker, 49	7			56	
Massachusetts	Boston	Mass. Inst. of Technology	John D. Runkle, Ph. D., LL. D.	34				
	Amherst	Mass. Agr. College, October 2d, 1867	W. S. Clark, LL. D., 50	10	77	77	100	
Michigan	Lansing	Mich. State Agr. Coll., February 1855	T. C. Abbot, LL. D.	13	123	123	156	
Minnesota	Minneapolis	Univ. of Minn., 1868	W. W. Folwell, M. A., 43.	10		11	255	P
Mississippi	Oxford	Univ. of Mississippi	Rev. J. N. Waddel, D. D., Chancellor	13				
Missouri	Columbia	Univ. of Mo., 1840 Agr. College, organized 1870	D. Read, LL. D., 68	25	40		491	P
Nebraska	Lincoln	Agr. Coll. of Nebraska, June 1872	S. R. Thompson Dean, 42	3	1	0	18	P
Nevada	Elko	Prep. Department	D. R. Sessions, Principal, 35				18	
New Hampshire	Hanover	Dartmouth Coll.—N H. Coll. of Agr. & Mech. Arts	Rev. Asa D. Smith, D.D., LL. D.	14			479	
New Jersey	New Brunswick	Rutgers College, 1770	Rev. W. H. Campbell, D. D.	10		71	188	P
New York	Ithaca	Cornell University 1868	A. D. White, LL. D., 43	23	5	352	512	
North Carolina	Chapel Hill	Univ of North Carolina	(Not yet organized.)					
Ohio	Columbus	Ohio Agr. & Mech. College, 1873.	Edward Orton, A. M.	10				
Oregon	Corvallis	Corvallis College, August, 1868.	B. L. Arnold, A. M., 38	5	20		155	P
Pennsylvania	State College	Pennsylvania State College, February 1859	Jas. Calder, D. D., 50.	11	0	52	148	P
Rhode Island	Providence	Brown University	Rev E. G. Robinson, D. D., LL. D.				255	
South Carolina	Orangeburg	Claflin University, State Agr. Coll & Mech. Ins.	Rev. E. Cooke, A.M M.D.					
Tennessee	Knoxville	Tenn. Agr. Coll., 1869.	Rev. T. W. Humes, S. T. D., 60	16		30	292	P
Texas	Bryan	Agr. & Mech. Coll. of Texas	Not yet organized.					
Vermont	Burlington	Univ. of Vermont and State Agr. Coll., 1865.	M. D. Buckham, A.M., 43	7		23	91	
Virginia	Hampton	Hampton Normal & Agr Institution	S. C. Armstrong, 36	18	0	0	200	P
	Blacksburgh	Virginia Agr. & Mech. College, 1872	C. L. C. Minor, M. A., LL. D., 39	7	9	12	222	P
West Virginia	Morgantown	West Virginia Univ.						
Wisconsin	Madison	Univ. of Wisconsin, 1868	Rev. J. H. Twombly, D. D., 48	16	0		345	P

* No distinct degree for these departments. Graduated as Ph. B.
** No Report.

L denotes that ladies are admitted on an equal footing with gentlemen	No. of ladies in attendance during the last collegiate year	Price paid per hour for student labor	Total amount of endowment fund	Amount of endowment received from sale of land scrip or lands	Amount of scrip or number of acres not yet disposed of, and estimated value of the same	Yearly income from all sources	Yearly income from the endowment received from the sale of land scrip or lands, donated by the U.S. under Act of 1862	Total valuation of farm, stock, implements, buildings, apparatus, and library	No. of acres in the farm proper exclusive of orchard garden, etc.	No. of acres in orchard	No. of acres in vegetable garden	No. of acres in small-fruit	No. of acres in native timber land	No. of acres in planted timber land	No. of acres in campus or ornamental grounds
age															
L 14	83	10—15 cts	$130,000	$130,000	0	$25,000	$10,000	$145,000	80	4	2	0	40	0	20
		8 cts		$253,000	0	$22,000	$20,000	$100,000	86		1	1	40	0	18
L	45														
				$120,000	0	$50,000 to 53,000	$6,000								
									70						
								$2,500. Farm	70						
L 15	79	12½ cts	$319,000	$319,000	25,000 a. $75,000	$40,000 to $48,000	$27,710	$65,000	500	35		2		20	21
L 16	0	7—10 cts	$371,000	$212,238	0		$20,000	$210,000	145	8	4	4	0	0	23
L 16	84	9 cts	$500,000		31,321 a.	$35,000	$32,000	$60,000	294	10	10	6	150	300	90
		5—10 cts	$165,000	$165,000	0	$18,000	$9,900	$250,000	400	7	12	1	150	0	50
L 15	8	10 cts	$134,000	$134,000	0	$13,000	$8,000	$180,000	370	2	10	1	175	75	22
			$12,800		0	$12,800	$6,000	$100,000	285	1	2	0	35	55	0
L 16		15 cts	$450,000	$170,000	0	$25,000	$8,500	$250,000	383	5	2	1½	40	3	20
L	0	10 cts	$231,377	$231,377	165,154 a. $495,463	variable	$16,196	$231,407	150	8	6		300	1	60
L 14	59	15 cts	$256,037	$256,037	149,374 a. $945,770	$34,698	$10,699	$147,713	114	2	3	1	0	0	
L 16	87	12 cts		$54,749	200,000 a. $325,000	$63,467	$5,474	$2,250. Stock	640	5	20	5	250		30
L 15	0	10—15 cts		0	90,000 a. $300,000		0		293	4	2	0	0	20	1
L 14	7														
			$397,325	$116,000			$6,960	$40,000	95	5					
L 17	40	15 cts	$1,261,999	$601,999	400,000 a. $2,000,000	$107,500	$40,000	Farm & Stock $56,000	124	10	6	1	20	0	60
L	50				90,000 a.	$6,500									
L 14		10—18 cts	$500,000	$395,267	0	$32,923	$30,000	$532,000	227	12	6	0	30	0	25
				$50,000											
		5—10 cts	$396,000	$268,909	0	$26,500	$22,572	$125,000	260				65		20
L 16	14			$122,626	0	$19,000	$8,130	$180,000							
L 14	89	5—8 cts	$125,000	$95,000	0	$40,000	$10,329	$209,500	185	18	3	1	0	1	10
		7—18 cts	$210,000	$190,000	0		$20,629	$38,950	300	5	0	0	50	0	30
L		15 cts	$220,833		52,403 a. $65,503	$65,781	$16,148		150	6	1	2	20	60	80

AHN, Johann Franz, a German teacher, noted for his method of teaching foreign languages, was born in 1796, and died in 1865. He gave instruction for many years in the *Realschule* at Neuss, and published several manuals for teaching the German and other languages; but his chief work was his *Practical Method for the rapid and easy Learning of the French Language (Praktischer Lehrgang zur schnellen und leichten Erlernung der französischen Sprache).* This work, between 1834 and 1875, passed through 190 editions. He was also the author of several works in general literature. His elementary books on the study of foreign languages have been translated into all the languages of the civilized world, and have every-where found an immense circulation. The fame thus acquired by Ahn's method of studying foreign languages, has led to numerous imitations, not a few of which are utterly unworthy of the just reputation of the original author. The method of Ahn was, to a large extent, founded on the works of Dr. Seidenstücker, and combines both the analytical and the synthetical method. The principle on which it is based is, that the mode of learning a foreign language should, as closely as possible, correspond to the manner in which a child acquires a knowledge of his native tongue.

AINSWORTH, Robert, an English teacher and scholar of considerable eminence, was born in 1660, and died in 1743. He taught private schools for some years, but having soon obtained a competency, he was enabled to relinquish the business of teaching. From 1714 to 1736, he was engaged in compiling the Latin dictionary which has made him famous. This work was extensively used in schools both in England and in the United States, but has for some years been superseded by works of greater accuracy.

ALABAMA, one of the southern states of the American Union, was originally a part of Georgia, except the south-western portion, which belonged to Florida. It was set off from Georgia, in 1798, as a portion of the Territory of Mississippi. From 1817 to 1819, it was known as the Territory of Alabama, in the latter year, being admitted into the Union as a state. Its area is 50,722 sq. m.; and its population, in 1870, was 996,992, of whom 521,384 were whites; 475,510, colored persons; and 98, Indians.

Educational History.—The first constitution of the state declared that "schools and the means of education should be forever encouraged," and gave directions for the preservation of all land grants received for this purpose from the general government, and the seminary lands for a "state university for the promotion of the arts, literature, and science." Attempts were made, in 1823, and at various times thereafter, to organize an efficient public-school system; but little was accomplished till 1854, when a general system was established under which, according to the report of the superintendent of education, the state, in 1857, was "in proportion to her white tax-paying and school-attending population, far ahead of nearly all the southern states, and most of the New England states; was the superior, in the school room, of even Massachusetts; and was almost the peer of New York and Pennsylvania." In 1856, county superintendents were substituted for the county boards of school commissioners previously existing. Under this system, township trustees had complete control of the school funds, and could aid schools already established according to their discretion. In 1860, according to the census of that year, there were in the state 1,903 public schools, with 61,751 pupils, and 17 colleges, attended by 2,120 students, besides 206 academies and other schools, with 10,778 pupils. The income for the support of common schools was $489,474, of which nearly $200,000 was derived from public funds. The progress made during the previous decade is indicated by the fact that, in 1850, there were reported 127,390 children in the state, of whom only 35,039 were attending school. The constitution of the state, ratified Feb. 4., 1868, expressly provided that all children between the ages of 5 and 21 years should be educated free of charge; and in accordance with its provisions, a new system was adopted the same year, which placed the schools under the supervision and control of a board of education, and gave to county superintendents much of the power before committed to township trustees. In 1871, the school law was again changed, the control of the schools being entrusted to a state superintendent, district superintendents, and township trustees, all elected by the people. The state board of education was abolished, its duties being discharged by the legislature, which, in the words of the law, "shall designate, in advance, such days as they may deem best (during the session of the general assembly) for the consideration of measures relating to the educational interests of the state; on which days the state superintendent shall be entitled to a seat in the house then considering educational measures, and shall have, and may exercise, all of the rights and privileges of a member of such house, but have no vote." In 1872, -3, and -4, various changes were made in the school law; but the new constitution of the state, which took effect December 6., 1875, supersedes all laws previously passed, and confirms that portion of the act proposed in 1871, which relates to the administration of the schools.

State Superintendents.—The office of state superintendent was first filled by General W. F. Perry, his title being Superintendent of Educacation. He was elected by the legislature in 1854. His successor, in 1854, was G. B. Du Val, who died in office, his successor being J. B. Taylor, who was appointed to fill the vacancy in 1865. John Ryan was elected to the office in 1866, and served till 1867, when the office was merged in that of state comptroller, its duties being performed by M. A. Chisholm, from November, 1867, to July, 1868. In that year, the title of the office was changed to that of Superintendent of Public Instruction, N. B. Cloud being the first incumbent. His successors were J. Hodgson (1870—72); Joseph H. Speed (1872—4); John M. McKleroy (1874—6); and Leroy F. Box, with the title of Superintendent of Education, restored by the constitution of 1875.

School System. — By the law of 1877, the officers of the school system are (1) a superintendent of education for the state, (2) a county superintendent in each county, and (3) three trustees of public schools in each township or other school-district. The *state superintendent* is elected by the people, and holds office for two years. He is required to give a bond in the sum of $15,000, for the faithful performance of his duties, which are as follows: (1) To exercise a general supervision over all the educational interests of the state; (2) To visit annually every county in the state for the purpose of inspecting the schools and their management, assisting also in the organization and management of teachers' institutes; (3) To apportion and distribute annually the school money as prescribed by law, and to see to its proper disbursement; (4) To keep proper records, and to prepare and distribute to the other school officers necessary blanks; (5) To keep in his office an accurate account of the capital of all sixteenth-section or other trust fund to which each township may be entitled; and (6) To make an annual report to the governor. The *county superintendents* are appointed by the state superintendent for two years. Their duties are to pay the teachers, to receive and take charge of the school moneys of the county, and distribute the same, and to make an annual report of their proceedings and the condition of the schools of the county, to the state superintendent. They are required to give bonds for the faithful performance of their duties. — Three *township trustees* are elected biennially who have the immediate control of the schools, subject to supervision by the county superintendent. In several of the cities, special school laws are in force, by which the immediate management of the schools is entrusted to city boards of commissioners, subject either to the supervision of the county superintendent, or of city superintendents. Four grades of schools are comprehended in the operation of the law—primary, intermediate, grammar, and high schools. In the first, spelling, reading, and the elements of arithmetic and of geography are taught; in the second, these studies are continued, with the addition of grammar and writing; in the third, etymology, composition, history, and elocution are added; and in the fourth, the higher branches common to schools of this grade are pursued. The school fund is composed of "the income from the 16th section trust fund, the surplus revenue fund, until it is called for by the United States government;" the proceeds of "all lands or other property given by individuals or appropriated by the state for educational purposes, and all estates of deceased persons who die without leaving a will or heir;" "an annual poll tax, not to exceed one dollar and fifty cents on each poll;" with such other moneys, "to be not less than $100,000 per annum, as the general assembly shall provide by taxation or otherwise." It is, also, made the duty of the assembly to increase, from time to time, the public-school fund, as the condition of the treasury and the resources of the state will admit." In addition to this, each county may raise, by annual taxation, an amount not exceeding 10 cents on each $100 of taxable property. Ninety-six per cent of the money raised or appropriated must be used for the payment of teachers unless otherwise directed by a vote of two-thirds of each branch of the legislature. Schools for whites and blacks must be separate. Sectarian or denominational schools are not entitled to any share of the public-school money. The school age is from 7 to 21 years.

Educational Condition. — The number of school-districts in the state, in 1875, was 1,696, the area of each being six miles square except in the case of fractional townships. In each of these districts, there must be, at least, one school for each race,—white and colored. The *school revenue*, at that time, was as follows:

Interest on 16th section fund....	$146,983.32
" " the surplus revenue fund....	53,526.94
One-fifth of the state revenue of the previous year....	209,887.44
Poll-tax collected in 1872—3....	80,486.66
" " " 1875......	73,555.30
Total....	$564,439.66

This state has received from the Peabody fund, since 1868, $59,550. The amount received in 1875 was $4,300. (See Peabody Fund.)

The expenditures were as follows:

Poll-tax disbursed by superintendents....	$73,555.30
Apportioned to counties and cities....	476,332.29
Apportioned to normal schools...	10,000.00
Incidental expenses....	2,550.00
Total....	$562,437.59

The other principal items of *school statistics* are the following:

No. of children of school age:	white,		233,733
	colored,		172,537
Total....			406,270
No. of children enrolled:	white,		91,202
	colored,		54,595
Total....			145,797
Average attendance:	white,		67,024
	colored,		43,229
Total....			110,253
No. of teachers:	white,	male,	1,669
	"	female,	1,006
	colored,	male,	1,002
		female,	284
Total....			3,961
Average monthly salary, white teachers....			$26.50
" " " colored "			$27.87

Normal Instruction. — Three state normal schools are in existence, the expenditure for which, during the year 1875, was $10,000. The first, at Florence, organized in 1873, is designed for the education of white teachers of both sexes.

It has a library and apparatus valued at $8,000, besides the buildings, which are estimated at $30,000; and, in 1875, reported 4 teachers and 126 pupils. The State Normal School and University, at Marion, and the Normal School, at Huntsville, are neither of them so extensive as that at Florence. They are intended for the education of colored teachers. The former, in 1875, had 3 teachers and 70 pupils; the latter, 2 teachers and 84 pupils. This institution is designed to become a university for the colored population of the state. Besides these state normal institutions, there are four schools of the same grade under the control of the American Missionary Association, and one conducted by the Methodists, having an aggregate, in the state, of 659 pupils under normal instruction.

Teachers' institutes were held, during the year 1875, in six counties, and their organization is contemplated in four more. The interest aroused, both on the part of the teachers and of the people at the places of meeting, leads to the belief that their permanent establishment is only a question of time.

Secondary Instruction.—There are 218 public high schools in operation in the state, 3 of which are for colored, the remainder, for white pupils. The course of study prescribed for these institutions has been already stated. A number of high schools and academies are scattered through the state, which occupy a position intermediate between the primary schools and colleges. Accurate statistics in regard to them are, however, difficult to procure. In Talladega College, the work has thus far been entirely preparatory, the collegiate classes not having been formed. In 1875, it had 12 instructors, and a total of 247 students in all the departments. It is conducted by the American Missionary Association for the benefit of the colored people.

Superior Instruction.—There are several institutions of this grade in the state, the most important of which are enumerated in the following list:

NAME	Location	When founded	Religious denomination
Howard College	Marion	1843	Bap.
Southern University.	Greensboro	1856	M. Epis. S.
Spring Hill College..	Near Mobile	1836	R. C.
Univ. of Alabama.. ..	Tuscaloosa	1820	Non-sect.

To the above list, must be added 9 institutions which afford opportunities for the higher education of women. In addition to the studies usually pursued in such institutions, special attention is given to the ornamental branches. The number of instructors in these institutions, in 1875, was 80; the number of students, 883.

Professional and Scientific Instruction.—The Agricultural and Mechanical College of Alabama was established at Auburn by an act of the legislature, its endowment being the proceeds of the land grant made by Congress for the benefit of agriculture and the mechanic arts. The amount thus derived was $218,000, to which was added all the property of East Alabama College, amounting to more than $100,000. Students are required to pursue a three years' elementary course, after which they are permitted to choose one of four courses—that of scientific agriculture, of civil and mining engineering, of literature, or of science. Under agricultural chemistry, are taught the composition of soils, the relation of air and moisture to vegetable growth, the chemistry of farm processes, the methods of improving soils, etc. These are accompanied by lessons in practical agriculture throughout the course. Military training is given, but only to the extent of improving the health and bearing of the students. Free scholarships, two in number, are provided for each county in the state. The course of study covers four years. The number of instructors in all the departments, in 1875, was 7; the number of students, 50, in the regular course, and 5 in the special. Law is taught in departments organized for the purpose in the State University and the Southern University; theology, in the Southern University, in Talladega College, and, to some extent, in Howard College; medicine, in the Southern University, and in the Medical College of Alabama, at Mobile. This last institution provides a two years' course of study, and, in 1875, had 9 instructors and 50 students.

Special Instruction.—The Alabama Institution for the Deaf, Dumb, and Blind was founded in 1860 at Talladega, and is maintained at an annual expense of about $18,000. The deaf-mute department is provided with a small museum of natural history and a library of 300 volumes. The studies pursued are mathematics and the ordinary English branches. Instruction is also given in agriculture and gardening. In 1875, there were 4 instructors and 52 pupils. In the department for the blind there were, in the same year, 2 instructors and 10 pupils.

ALABAMA, University of, at Tuscaloosa, was chartered in 1820, but not organized till 1831. At the commencement of the civil war, it was in a prosperous condition, but was burned by a federal force during the war. It was rebuilt in 1868, and is now in a flourishing condition. The value of its grounds, buildings, apparatus, etc., is estimated at $150,000; and it has an endowment of $300,000. Its library contains 5,000 volumes. In 1874, the number of instructors was 9, and of collegiate students 76. The academic department embraces eight courses of study, open to the selection of the students: (1) Latin language and literature; (2) Greek language and literature; (3) English language and literature; (4) Modern languages; (5) Chemistry, geology, and natural history; (6) Natural philosophy; (7) Mathematics and astronomy; (8) Mental and moral philosophy. The department of professional education embraces a school of law, and a school of civil engineering. All the students, except those specially infirm, are subjected to military drill. A special military school affords instruction in military science and art, in military law, and in elementary tactics. The president of the institution is Carlos G. Schmidt, LL. D., elected in 1874.

ALBION COLLEGE, at Albion, Mich., was chartered as a college in 1861, by members of the Methodist Episcopal Church. The number of students is about 200, males and females. It has a preparatory, classical, and scientific course of instruction. Its endowment fund is $200,000. Its library contains about 2000 volumes. Rev. G. B. Jocelyn, D. D., is the president of the institution (1875). The tuition is free.

ALCOTT, Amos Bronson, an American educator, was born in 1799. He first gained distinction by teaching an infant school, for which employment he evinced a singular aptitude and tact. He removed to Boston in 1828, where he manifested the same skill in teaching young children, at the Masonic Temple. His methods, however, were in advance of public opinion, and were disapproved. On the invitation of James P. Greaves, of London, the co-laborer of Pestalozzi in Switzerland, in educational reform, Mr. Alcott, in 1842, went to England; but the death of Mr. Greaves, which occurred before his arrival, interfered with his prospects. On his return to this country, he attempted with some of his English friends to establish a new community at Harvard, Mass.; but the enterprise was soon abandoned. Mr. Alcott has since written several works, one of which, *Concord Days*, was published in 1872.—See E. P. PEABODY, *Record of School* (Boston, 1834), and *Conversation on the Gospels* (Boston, 1836).

ALCOTT, William Alexander, M. D., cousin of the preceding, noted for his zeal and success as a common-school teacher, and his lifelong efforts in behalf of popular education, was born in Wolcott, Ct., in 1798, and died at Auburndale, Mass., in 1859. He had only an elementary education; and, for several years, he taught in the district schools of his native State, distinguished for his remarkable earnestness, and the many reforms which he labored to introduce into the imperfect school management and instruction of his time. He afterwards studied medicine; but his chief labors were devoted to the cause of education, co-operating with Gallaudet, Woodbridge, and others in the endeavor to bring about much-needed reforms in the public schools of the State. Subsequently, he associated himself with William C. Woodbridge, and assisted him in the compilation of his school geographies, and also in editing the *American Annals of Education*. He also edited several juvenile periodicals. His newspaper contributions were very numerous, and quite effective on account of their racy and spirited style. An article which he published on the *Construction of School-Houses* gained him a premium from the American Institute of Instruction. His labors as a lecturer on hygiene, practical teaching, and kindred subjects were severe and unintermitting. He is said to have visited more than 20,000 schools, in many of which he delivered lectures. His writings are very numerous; and some of them were widely popular. The most noted are: *Confessions of a Schoolmaster*, *The House I Live in*, *The Young Man's Guide*, *The Young Woman's Guide*, *The Young Housekeeper*, etc., etc. Dr. Alcott was a genuine philanthropist, though extreme and somewhat eccentric in many of his views. As one of the pioneers in the cause of common-school education and reform in practical teaching, his labors were of incalculable value.

ALCUIN (Lat. *Flaccus Albinus Alcuinus*), a distinguished English scholar, ecclesiastic, and reviver of learning, was born in Yorkshire about 753, and died in 804. He was educated at York under the direction of Archbishop Egbert, and was subsequently director of the seminary in that city. Returning from Rome, whither he had gone by direction of the English king, he met the emperor Charlemagne at Parma, and was induced by that monarch to take up his residence at the French court, and become the royal preceptor. Accordingly, at Aix-la-Chapelle, he gave instruction, for some time, to Charlemagne and his family, in rhetoric, logic, divinity, and mathematics. It has been said with much truth, that "France is indebted to Alcuin for all the polite learning of which it could boast in that and the following ages." The universities of Paris, Tours, Soissons, and many others were either founded by him, or greatly benefited by his zeal in their behalf, and the favor which he procured for them from Charlemagne. In 796, he was appointed abbot of St. Martin's at Tours, where he opened a school which acquired great celebrity. Here he continued teaching till his death. Alcuin was probably the most learned man and the most illustrious teacher of his age; and his labors were very important in giving an impetus to the revival of learning, after the intellectual night of the Dark Ages. He left many epistles, poems, and treatises upon theological and historical subjects, all written in Latin, and noted for the elegance and purity of their style. The *Life of Alcuin* (*Leben Alcuin's*) by Prof. LORENZ, of Halle (1829) has been translated into English (1837) by SLEE.—See *Allgemeine Deutsche Biographie*, art. *Alcuin*.

ALEXANDRIAN SCHOOL, a name variously applied, but chiefly designating (1) a school of philosophers at Alexandria in Egypt, which is chiefly noted for the development of Neoplatonism, and its efforts to harmonize oriental theology with Greek dialectics; (2) a school of Christian theologians in the same city, which aimed at harmonizing Pagan philosophy with Christian theology. The city of Alexandria became, soon after the death of Alexander the Great, by whom it had been founded, a chief seat of science and literature. The time during which the teachers and schools of Alexandria enjoyed a world-wide reputation, is called the *Alexandrian Age*, and is divided into two periods, the former embracing the time of the Ptolemies, and extending from 323 to 30 B. C., and the second embracing the time of the Romans, extending from 30 B. C. to 640 A. D. Grammar, poetry, mathematics, and the natural sciences were all taught in the Alexandrian School; and among the most illustrious teachers were Ammonius, Plotinus, Hierocles, Proclus, Apollonius (poet), Galen (physician), Euclid (mathematician), Eratosthenes (astronomer), Ptolemy (geographer). When Christianity began to gain a firm footing, it was found necessary to devote to the instruction of the catechumens special care, in order to fortify them against the attacks upon Christianity by the pagan philosophers. The catechists not only gave to the candidates for admission into the Christian Church elementary instruction, but also delivered learned lectures on Christianity, and combined with it instruction in philosophy. Though, from its original character, the school continued to be called the catechetical school of Alexandria, it was in its subsequent development something very different from a catechetical school, and may rather be regarded as the first theological faculty, or school of scientific theology, in the Christian Church. In opposition to the pagan philosophers, the teachers of the Christian schools chiefly undertook to show that Christianity is the only true philosophy, and alone can lead to the true *gnosis*, or knowledge. As the first teacher of the Christian theological school, Pantaenus (about 180) is mentioned, who was followed by Clement, Origen, Heraclas, Dionysius, Pierius, Theognostes, Serapion, Peter Martyr. The last famous teacher of the school was Didymus the Blind (335 to 395), who, being blind from boyhood, had learned reading, writing, geometry, etc., by means of brass letters and figures, and was equally distinguished for his piety and extent of knowledge. The method of teaching used in this, as well as in the other schools of that age, was the Pythagorean. The teacher explained, and the pupil listened in silence, though he was permitted to ask questions. Every teacher taught in his own house, there being no public school buildings. The teachers did not receive a fixed salary, but the pupils made them presents. Origen is reported to have declined all presents. He supported himself on a daily stipend of four oboli, which he received for copying the manuscripts of ancient classics.—See Matter, *Histoire de l'école d'Alexandrie* (2 vols., 2d ed., Paris, 1840—1844); Barthélemy St.-Hilaire, *De l'école d'Alexandrie* (Paris, 1845); Simon, *Histoire de l'école d'Alexandrie* (2 vols., Paris, 1844—1845); Vacherot, *Histoire critique de l'école d'Alexandrie* (3 vols., Paris, 1846—1851); Guerike, *De Schola quæ Alexandriae floruit catechetica* (Halle, 1824); Hasselbach, *De schola quae Alexandriae floruit catechetica* (Stettin, 1826); Ritter, *Geschichte der christlichen Philosophie*, vol. I, p. 419—564.

ALFRED THE GREAT, king of the West Saxons and virtually ruler of all England, holds the same prominent position in the history of education in England, which Charlemagne occupies in France and Germany. He was born in 849, succeeded his brother Ethelred as king of the West Saxons in 871, and died in 901. After having thoroughly humbled the Danish invaders and secured the independence of England, he gave his whole attention to internal reforms, and specially to the promotion of education. Although he is said to have been twelve years of age, before he was taught the alphabet, and although his health was always feeble, he showed a thirst for knowledge which is almost without parallel in the history of European princes. He gave eight hours every day to religious exercises and to study. He translated numerous works from Latin into Saxon, as Bede's *History of England*, Boethius' *De Consolatione Philosophiae*, and the *Liber Pastoralis Curae* of Gregory the Great. He invited distinguished scholars to his court from all countries, among whom Wernfried, Plegmund, and Athelstan of Mercia, Grimbald of France, the Irishman John Scotus Erigena, and the monk Asser of Wales are the most famous. A large number of schools were founded and suitably organized. The convents became, more generally than had been the case before, nurseries of science. All the public officers were required to learn to read and write; and Alfred declared that the children of every freeman without exception should be able to read and write, and should be instructed in the Latin language. A complete list of his works is given in the *Encyclopædia Britannica*, art. *Alfred.*—See Stolberg, *Leben Alfred des Grossen*, (Münster, 1815); Weiss, *Geschichte Alfred des Grossen* (Schaffhausen, 1852); Freeman, *Old English History* and *History of the Norman Conquest.*

ALFRED UNIVERSITY, at Alfred, N. Y., was founded in 1857, by the Seventh Day Baptists. The number of students in the preparatory department (in 1874) was 293, males and females, and in the collegiate department 114, of whom 42 were females. It has a classical and a collegiate course of instruction. Its endowment is $70,000; the number of volumes in its library is about 3500. Rev. J. Allen is the president. Its tuition fee is small.

ALGEBRA (Arab. *al-jabr*, reduction of parts to a whole). For a general consideration of the purposes for which this study should be pursued, and its proper place and relative proportion of time in the curriculum, the reader is referred to the article Mathematics. It is the purpose of this article to indicate some of the principles to be kept in view, and the methods to be pursued in teaching algebra.

The Literal Notation.—While this notation is not peculiar to algebra, but is the characteristic language of mathematics, the student usually encounters it for the first time when he enters upon this study. No satisfactory progress can be made in any of the higher branches of mathematics, as General Geometry, Calculus, Mechanics, Astronomy, etc., without a good knowledge of the literal notation. By far the larger part of the difficulty which the ordinary student finds in his study of algebra proper — the science of the *equation* — and in his more advanced study of mathematics, grows out of an imperfect knowledge of the notation. These are facts well known to all experienced teachers. Nevertheless, it is no unfrequent thing to hear a teacher say of a pupil:

"He is quite good in algebra, but cannot get along very well with literal examples!" Nothing could be more absurd. It comes from mistaking the importance and fundamental character of this notation. It is of the first importance that, at the outset, a clear conception be gained of the nature of this notation, and that, in all the course, no method nor language be used which will do violence to these principles. Thus, that the letters a, b, x, y, etc., as used in mathematics, represent pure number, or quantity, is to be amply illustrated in the first lessons, and care is to be taken that no vicious conception insinuate itself. To say that, as 5 apples and 6 apples make 11 apples, so $5a$ and $6a$ make $11a$, is to teach error. If this comparison teaches any thing, it is that the letter a in $5a$, $6a$, and $11a$, simply gives to the numbers 5, 6, and 11 a concrete significance, as does the word *apples* in the first instance; but this is erroneous. The true conception of the use of a, to represent a number, may be given in this way: As 5 times 7 and 6 times 7 make 11 times 7, so 5 times any number and 6 times the same number make 11 times that number. Now, let a represent any number whatever; then 5 times a and 6 times a make 11 times a. The two thoughts to be impressed are, that the letter represents some number, and that it is immaterial what number it is, so long as it represents the same number in all cases in the same problem. Again, the genius of the literal notation requires that no conception be taken of a letter as a representative of number, which is not equally applicable to fractional and integral numbers. Thus we may not say that a fraction which has a numerator a and a denominator b, represents a of the b equal parts of a quantity, or number, as we affirm that $\frac{3}{4}$ represents 3 of the 4 equal parts; for this conception of a fraction requires that the denominator be integral; otherwise, if b represent a mixed number, as $4\frac{3}{4}$, we have the absurdity of attempting to conceive a quantity as divided into $4\frac{3}{4}$ equal parts. The only conception of a fraction, sufficiently broad to comport with the nature of the literal notation, is that it is an indicated operation in division; and all operations in fractions should be demonstrated from this definition.

So also to read x^m, "x to the mth power", when m is not necessarily an integer, is to violate this fundamental characteristic of the notation. In like manner, to use the expressions *greatest common divisor*, and *least common multiple*, when literal quantities are under consideration, is an absurdity, and moreover fails to give any indication of the idea which should be conveyed. For example, we cannot affirm that $2ax^2—2bxy$ is the *greatest* common divisor of $2a^3x^4—2a^2bx^3y+2ab^2x^2y^2—2b^3xy^3$ and $4a^2b^2x^3y^2—2ab^3x^2y^3—2b^4xy^4$; since $ax—by$ is a divisor of these polynomials, and whether $2ax^2—2bxy$ is greater or less than $ax—by$ cannot be affirmed unless the relative values of the letters are known. To illustrate, $2ax^2—2bxy=2x(ax—by)$. Now suppose $a=500$, $b=10$, $y=2$, and $x=\frac{1}{10}$; then $ax—by=30$, and $2ax^2—2bxy=6$. Moreover, it is not a question as to the value of the divisor that is involved; it is a question as to the *degree*. Hence, what we wish to affirm is that $2ax^2—2bxy$ is the *highest common divisor* of these polynomials, with respect to x.

In order that the pupil may get an adequate conception of the nature of the literal notation, it is well to keep prominently before his mind the fact that the fundamental operations of addition, subtraction, multiplication, and division, whether of integers or fractions, the various transformations and reductions of fractions, as well as involution and evolution, are exactly the same as the corresponding ones with which he is already familiar in arithmetic, except as they are modified by the difference between the literal and the Arabic notations. Thus, the pupil will be led to observe that the *orders* of the Arabic notation are analogous to the terms of a polynomial in the literal notation, and that the process of "carrying" in the Arabic addition, etc., has no analogue in the literal, simply because there is no established relation between the terms in the latter. Again, he will see that, in both cases, addition is the process of combining several quantities, so that the result shall express the aggregate value in the fewest terms consistent with the notation. This being the conception of addition, he will see that for the same reason that we say, in the Arabic notation, that the sum of 8 and 7 is 5 and 10 (fif-teen), instead of 8 and 7, we say, in the literal notation, that the sum of $5ax$ and $6ax$ is $11ax$. In fact, it is quite conceivable that the pupil, who understands the common or Arabic arithmetic, can master the literal arithmetic for himself, after he has fairly learned the laws of the new notation.

Positive and Negative.—Although the signs + and —, even as indicating the affections positive and negative, are not confined to the literal notation, the pupil first comes to their regular use in this connection, and finds this new element of the notation one of his most vexatious stumbling-blocks. Thus, that the sum of $5ay$ and $—2ay$ should be $3ay$, and their difference $7ay$, and that "minus multiplied by minus should give plus," as we are wont to say, often seems absurd to the learner. Yet even here he may be taught to find analogies in the teachings of the common arithmetic, which will at least partially remove the difficulty. When he comes to understand, that attributing to numbers the affection positive or negative gives to them a sort of concrete significance, and allies them in some sort to denominate numbers, he may at least see, that $5ay$ and $2ay$ do not necessarily make $7ay$; for, if one were feet and the other yards, the sum would not be $7ay$ of either. If, then, he comes to understand that the fundamental idea of this notation is, that the terms positive and negative indicate simply such opposition in kind, in the numbers to which they are applied, as makes one tend to destroy or counterbalance the other, he is prepared to see that the sum of $5ay$ and $—2ay$ is $3ay$; since, when put together, the $—2ay$, by its opposition of nature, destroys $2ay$ of the $5ay$. The ordinary illustrations in which forces acting in opposite directions, motion in opposite directions, amounts of property and of debts, etc., are characterized as positive and negative, are helpful, if made to set in clearer light the fact, that this distinction is simply in regard to the way in which the numbers are applied, and not really in regard to the numbers themselves.

So, also, in multiplication, the three principles, (1) that the product is like the multiplicand; (2) that a multiplier must be conceived as essentially abstract when the operation is performed; and (3) that the sign of the multiplier shows what is to be done with the product when obtained, remove all the difficulty, and make it seem no more absurd that "minus multiplied by minus gives plus," than that "plus multiplied by plus gives plus": in fact, exactly the same course of argument is required to establish the one conclusion as to establish the other. When we analyze the operation which we call multiplying $+a$ by $+b$, we say "$+a$ taken b times gives $+ab$. Now the sign $+$ before the multiplier indicates that the product is to be taken additively, that is, united to other quantities by its own sign." So when we multiply $-a$ by $-b$, we say "$-a$ multiplied by b (a mere number) gives $-ab$ (a product like the multiplicand). But the $-$ sign before the multiplier indicates that this product is to be taken subtractively, *i. e.* united with other quantities by a sign opposite to its own." This, however, is not the place to develop the theory of positive and negative quantities; our only purpose here is to show that the whole grows out of a kind of concrete or denominate significance which is thus put upon the numbers, and which bears some analogy to familiar principles of common arithmetic.

Exponents.—One other feature of the mathematical notation comes into prominence now for the first time, and needs to be clearly comprehended: it is the theory of exponents. Here, as well as elsewhere, it is important to guard against false impressions at the start. The idea that an exponent indicates a power is often so fixed in the pupil's mind at first, that he never afterwards rids himself of the impression. To avoid this, it is well to have the pupil learn at the outset that not all exponents indicate the same thing; thus, while some indicate powers, others indicate roots, others roots of powers, and others still the reciprocals of the latter. Too much pains can scarcely be taken to strip this matter of all obscurity, and allow no fog to gather around it. Nothing in algebra gives the young learner so much difficulty as radicals, and all because he is not thoroughly taught the notation. Perhaps, but few, even of those who have attained considerable proficiency in mathematics, have really set clearly before their own minds the fact that $\frac{2}{3}$ used as an exponent is not a fraction in the same sense as $\frac{2}{3}$ in its ordinary use, and hence that the demonstration that $\frac{4}{6} = \frac{2}{3}$ as given concerning common fractions, by no means proves that the exponent $\frac{4}{6}$ equals the exponent $\frac{2}{3}$. Other principles bearing on this important subject will be developed under the following head.

Methods of Demonstration.—It requires no argument to convince any one that, in establishing the working features, if we may so speak, of a science, it is important that they be exhibited as direct outgrowths of fundamental notions. Thus, in giving a child his first conception of a common fraction, no intelligent teacher would use the conception of a fraction as an indicated operation in division, and attempt to build up the theory of common fractions on that notion. It may be elegant and logical, and when we come to the literal notation it is essential; but it is not sufficiently radical for the tyro. It is not natural, but scientific rather. So in the literal notation, the proposition that *the product of the square roots of two numbers is equal to the square root of their product*, may be demonstrated thus: Let $\sqrt{a} \times \sqrt{b} = p$, whence $ab = p^2$; and, extracting the square root of each member we have $\sqrt{ab} = p$. Hence $\sqrt{a} \times \sqrt{b} = \sqrt{ab}$. Now, this is concise and mathematically elegant; but it gives the pupil no insight whatever into "the reason why." What is needed here is, that the pupil be enabled to see that this proposition grows out of the nature of a square root as one of the two equal factors of a number; *i. e.*, he needs to see its connection with fundamental conceptions. Thus $\sqrt{ab}$ means that the product ab is to be resolved into two equal factors, and that one of them is to be taken. Now, if we resolve a into two equal factors, as $\sqrt{a}$ and $\sqrt{a}$, and b into two equal factors, as $\sqrt{b}$ and $\sqrt{b}$, ab will be resolved into four factors which can be arranged in two equal groups, thus $\sqrt{a}\sqrt{b} \times \sqrt{a}\sqrt{b}$. Hence $\sqrt{a}\sqrt{b}$ is the square root of ab because it is one of the two equal factors into which ab can be conceived to be resolved. In this manner, all operations in radicals may be seen to be based upon the most elementary principles of factoring. Again, as another illustration of this vicious use of the equation in demonstrating elementary theorems, let us consider the common theorems concerning the transformations of a proportion. As usually demonstrated, by transforming the proportion into an equation, and *vice versa*, the real reason why the proposed transformation does not vitiate the proportion, is not brought to light at all. For example, suppose we are to prove that, *If four quantities are in proportion, they are in proportion by composition*, *i. e.*, if $a : b :: c : d$, $a : a + b :: c : c + d$. The common method is to pass from the given proportion to the equation $bc = ad$, then add ac to each member, obtaining $ac + bc = ac + ad$, or $c\,(a + b) = a\,(c + d)$, and then to transform this equation into the proportion $a : a + b :: c : c + d$. No doubt, this is concise and elegant, but the real reason why the transformation does not destroy the proportion, viz., that *both ratios have been divided by the same number*, is not even suggested by this demonstration. On the other hand, let the following demonstration be used, and the pupil not only sees exactly why the transformation does not destroy the proportion, but at every step has his attention held closely to the fundamental characteristics of a proportion. Let the ratio $a : b$ be r; hence as a proportion is an equality of ratios, the ratio $c : d$ is r; and we have $a \div b = r$, and $c \div d = r$, or $a = br$, and $c = dr$. Substituting these values of a and c in the terms of the proportion which are changed by the transformation, we have $a + b = br + b$, or $b(r + 1)$, and $c + d = dr + d$, or $d(r + 1)$; whence we see that $a : a + b :: c : c + d$ is deduced from $a : b :: c : d$ by multiplying both consequents by $r + 1$ (the ratio $+ 1$), which does not destroy the equality of the ratios constituting the proportion, since it divides both by the same number. Moreover, this method of substituting for the antecedent of each ratio the consequent multiplied by the ratio, enables us to demonstrate all propositions concerning the transformation of a proportion by one uniform method, which method in all cases clearly reveals the reason why the proportion is not destroyed.

This choice of a line of argument which shall be applicable to an entire class of propositions is of no slight importance in constructing a mathematical course.. It enables a student to learn with greater facility and satisfaction the demonstrations, and fixes them more firmly in his memory; while it also gives broader and more scientific views of truth, by thus classifying, and bringing into one line of thought, numerous truths which would otherwise be seen only as so many isolated facts. This is beautifully illustrated in the higher algebra by the use of the infinitesimal method of developing the binomial formula, logarithmic series, etc., in contrast with the cumbrous special methods which have so long held their place in our text-books. By the old method of indeterminate co-efficients, the pupil is required to pursue what is to him always an obscure, long, and unsatisfactory process for the development of each of these series. Nor are these processes so nearly related to each other, but that, to the mind of the learner, they would be even more perplexing than if absolutely independent. Moreover, they are styles of argument which he never meets with again during his subsequent course. On the other hand, after having learned a few simple rules for differentiating algebraic and logarithmic functions.* he is enabled to develop these, and several other important theorems, in one general way, which is as remarkable for its concise simplicity, as it is for its extensive application and habitual recurrence in the subsequent course.

Range of Topics to be Embraced.—We may distinguish three different classes of pupils, who require as many different courses in this study. *First*, there is a very large number of our youth who, if in the city, never pass beyond the grammar school, or, if in the country, never have other school advantages than those furnished by the common or rural district school. Nevertheless, many of these will receive much greater profit from spending half a year, or a year, in obtaining a knowledge of the elements of algebra (and even of geometry) than they usually do in studying arithmetic. (See ARITHMETIC.) For this class the proper range of topics is, a clear exposition of the nature of the *literal notation;* the *fundamental rules*, and *fractions*, involving only the simpler forms of expression, and excluding such abstruse subjects as the more difficult theorems on factoring, the theory of lowest common multiple and highest common divisor; *simple equations* involving one, two, and three unknown quantities; *ratio* and *proportion;* an elementary treatment of the subject of *radicals* with special attention given to their nature as growing out of the simplest principles of factoring; *pure* and *affected quadratics* involving one, and two unknown quantities. The *second* class comprises what may be called high school pupils. For this grade the range of topics need not be much widened, but the study of each should be extended and deepened. This will be the case especially as regards the *theory of exponents, positive and negative quantities, radicals, equations involving radicals*, and *simultaneous equations*, especially those of the second degree. To this should be added the *arithmetical* and *geometrical progressions*, a practical knowledge of the *binomial formula*, and *logarithms*, and a somewhat extended treatment of the applications of algebra to the business rules of arithmetic. A wide acquaintance with the results attained in our high schools in all parts of the country, and an observation extending over more than twenty years satisfy the writer that time spent in these schools in attempts to master the theory of *indeterminate co-efficients*, the demonstration of the *binomial* and *logarithmic formulas*, or upon the *higher equations*, *series*, etc., is, if not a total loss, at least an absorption of time which might be much more profitably employed on other subjects, such as, for example, history, literature, or the elements of the natural sciences. The course taken by such pupils gives them no occasion to use any of these principles of the higher algebra: and the mastery of them which they can attain in any reasonable amount of time is quite too imperfect to subserve the ends of good mental discipline. This second course is entirely adequate to fit a student for admission into any American college or university. The *third* course is what we may call the college course. The principal topics which our present arrangements allow us to add to the second course as above marked out, in order to constitute this course, are the *theory of indeterminate co-efficients;* a sufficient knowledge of the differentiation of algebraic and logarithmic functions to enable the student to appreciate the idea of *function* and *variable*, to produce the *binomial formula*, the *logarithmic series*, and *Taylor's formula*, which is

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*) It may be new to some that there is a simple elementary method of proving the rule for differentiating a logarithm without reference to series. This method was discovered by Dr. Watson of the University of Michigan, and was first presented to the public in OLNEY's *University Algebra* in 1873.

necessary in treating *Sturm's theorem*, and to appreciate also the demonstration of that *theorem; indeterminate equations;* a tolerably full practical treatment of the *higher numerical equations;* and the *interpretation of equations;* adding, if may be, something upon *interpolation* and *series* in general.

Class-Room Work.—It is probably unnecessary to say, that a careful and thorough study of text-books should be the foundation of our class-room work on this subject; nevertheless, so much is said, at the present time, in disparagement of "hearing recitations" instead of "teaching," that it may be well to remark that, if our schools succeed in inspiring their pupils with a love of books, and in teaching how to use them, they accomplish in this a greater good than even in the mere knowledge which they may impart. Books are the great store-house of knowledge, and he who has the habit of using them intelligently has the key to all human knowledge. But it is not to be denied, that there is an important service to be rendered by the living teacher, albeit that service, especially in this department, is not formal lecturing on the principles of the science. With younger pupils, the true teacher will often preface a subject with a familiar talk designed to prepare them for an intelligent study of the lesson to be assigned, to awaken an interest in it, or to enable them to surmount some particular difficulty. For example, suppose a class of young pupils are to have their first lesson in subtraction in algebra; a preliminary talk like the following will be exceedingly helpful, perhaps necessary, to an intelligent preparation of the lesson. Observe that, in order to profit the class, the teacher must confine his illustrations rigidly to the essential points on which the lesson is based. In this case these are (1) *Adding a negative quantity destroys an equal positive quantity;* (2) *Adding a positive quantity destroys an equal negative quantity;* (3) *As the minuend is the sum of the subtrahend and remainder, if the subtrahend is destroyed from out the minuend, the remainder is left.* Now, in what order shall these three principles be presented? Doubtless the scientific order is that just given; but in such an introduction to the subject as we are considering, it may be best to present the 3d first; since this is a truth already familiar, and hence affords a connecting link with previous knowledge. Moreover, this being already before the mind as a statement of what is to be done, the 1st and 2d will follow in a natural order as an answer to the question how the purpose is accomplished. To present the 3d principle, the teacher may place on the blackboard some simple example in subtraction as:

$$\begin{array}{r}125\\74\\\hline 51.\end{array}$$

He will then question the class thus: What is the 125 called? What the 74? What the 51? How much more than 74 is 125? If we add 74 and 25, what is the sum? Of what then is the minuend composed? What is $51+74$? If we destroy the 74, what remains? If in any case we can destroy the subtrahend from out the minuend, what will remain? Having brought this idea clearly before the mind, the teacher will proceed to the 1st principle. If $-3ab$ be added to $7ab$ how much of the $7ab$ will it destroy? (Here again we proceed from a fundamental conception—the nature of quantities as positive and negative, thus deducing the new from the old.) Repeat such illustrations of this principle as may have been given in addition If several boys are urging a sled forward by $7ab$ pounds, and the strength of another boy amounting to $3ab$ pounds is added, but exerted in an opposite direction, what now is the sum of their efforts? What kind of a quantity do we call the $3ab$? [Negative.] Why? How much of the $+7ab$ does $-3ab$ destroy when we add it? If then we wish to destroy $+3ab$ from $+7ab$, how may we do it? Proceeding then to the 2d principle, it may be asked, how much is $6ay-2ay$? If now we add $+2ay$ to $6ay-2ay$, which is $4ay$, what does it become? What does the $+2ay$ destroy? What then is the effect of adding a positive quantity? Such introductory elucidations should always be held closely to the plan of development which the pupil is to study, and should be made to throw light upon it. It is a common and very pernicious thing for teachers to attempt to teach in one line of development, while the text-book in the pupil's hands gives quite another. In most cases of this kind, either the teacher's effort or the text-book is useless, or probably worse—they tend to confuse each other. Such teaching should culminate in the very language of the text; and it is desirable that this language be read from the book by the pupil, as the conclusion of the teaching. Moreover, there is great danger of overdoing this kind of work. Whenever it is practicable, the pupil should be required to prepare his lesson from the book. A competent teacher will find sufficient opportunity for "teaching" after the pupils have gathered all they can from the book. Another important service to be rendered by the living teacher is to emphasize central truths, and hold the pupils to a constant review of them. So also it is his duty to keep in prominence the outlines of the subject, that the pupil may always know just where he is at work and in what relation to other parts of the the subject that which he is studying stands. All definitions, statements of principles, and theorems should be thoroughly memorized by the pupil and recited again and again. In entering upon a new subject, as soon as these can be intelligently learned, they should be recited in a most careful and formal manner; and, in connection with subsequent demonstrations and solutions, they should be called up and repeated. Thus, suppose a high school class entering upon the subject of *equations*. Such a class may be supposed to be able to grasp the meaning of the definitions without preliminary aid from the teacher, save in special cases. The first lesson will probably contain a dozen or more definitions, with a proposition or two; and the first work should be the recitation of these by the pupils individually, without any questions or suggestions from the teacher. Illustrations should also be required of the pupils;

but neither illustrations nor demonstrations should be memorized, although great care should be taken to secure a good style of expression, modeled on that of the text. To this first recitation on a new subject all the class should give the strictest attention; and every point in it should be brought out, at least once in the hearing of every pupil. In the course of subsequent recitations in the same general subject, individuals will be questioned on the principles thus developed. For example, what algebra is will have been brought clearly to view in this first recitation; but when a pupil has stated and solved some problem, and has given his explanation of the solution from the blackboard, the teacher may ask: Why do you say you have solved this problem by algebra? The answer will be: Because I have used the *equation* as an instrument with which to effect the solution. Can you solve this problem without the use of an equation? What do you call such a solution? What is algebra? Again, suppose the solution has involved the reduction of such an equation as $2x-\frac{1}{3}=\frac{1}{2}(3x-1)+\frac{1}{3}(x+1)$. Of course, in the first place the pupil will solve the example and give a good logical account of the solution; but the teacher will make it the occasion for reviewing certain definitions and principles with this particular student, in such a practical connection. Thus he will ask: What is your first equation? What is your last? [$x=2$.] Do you look upon these as one and the same equation, or as different equations? In how many different forms have you written your given equation? What general term do you apply to these processes of changing the form of an equation? What is *transformation*? Similarly, every principle and definition will be reviewed again and again in such practical connections. But the great, and almost universal, evil in our methods of conducting recitations is the habit of allowing mere statements of processes to pass for expositions of principles, as given by the pupil from the blackboard in explanation of his work. The writer's observation satisfies him that this most pernicious practice is, as he has said, almost universal Let us illustrate the common practice, and then point out the better way. The pupil has placed the following work upon the board:

$$
\begin{gathered}
7x^2-28x+14=238\\
7x^2-28x=224\\
x^2-4x=32\\
x^2-4x+4=36\\
x-2=\pm 6\\
x=2\pm 6=8, \text{ and } -4.
\end{gathered}
$$

He is then called upon to explain his work. Something like the following is what we hear in the majority of our best schools:

"Given $7x^2-28x+14=238$, to find the value of x.

"Transposing, I have $7x^2-28x=224$.

"Dividing by 7, $x^2-4x=32$.

"Completing the square, $x^2-4x+4=36$.

"Extracting the square root, $x-2=\pm 6$.

"Transposing. $x=2\pm 6=8$, and -4 "

And the pupil turns to his instructor in the full consciousness of duty nobly done. The fact is, all that he has said is useless, nay, worse than useless. He has simply intimated what processes he has performed. That he could solve the problem was sufficiently apparent from his work. There was no need that he should tell us what he had done, when he had performed the work before our eyes. What is wanted is a clear and orderly exposition of the reason why he takes every step. This involves two points, since he is to show (1) that the step taken tends to the desired end, that is, the freeing of the unknown quantity from its connections with known quantities so as finally to make it stand alone as one member of the equation; and (2) that the step does not destroy the equation.* Something like the following should be the style of explanation: "Given $7x^2-28x+14=238$, to find the value of x. In order to do this, I wish so to transform the equation that, in the end, x shall stand alone, constituting one member of the equation, while a known quantity constitutes the other member. Hence I transpose the known quantity 14 to the second member. This I do by subtracting 14 from each member, which may be done without destroying the equation (or the equality of the members), since, if the same quantity be subtracted from equals, the remainders are equal. I thus obtain $7x^2-28x=224$. I now observe that the first term of the first member contains the square of x, while the second contains the first power. I wish to obtain an equation which shall contain only the first power of x. In order to do this, I make the first term a perfect power by dividing each member of the equation by 7, which does not destroy the equality, since equals divided by equals give equal quotients, and I have $x^2-4x=32$. Now, observing that x^2-4x constitutes the first two terms of the square of a binomial of which the square of half the coefficient of x, or 4, is the third term, I add 4 to this member to make it a complete square, and also add 4 to the second member to preserve the equality of the members, and have $x^2-4x+4=36$. Extracting the square root of x^2-4x+4, I have $x-2$, an expression which contains only the first power of x; but to preserve the equality, I also extract the square root of the second member, obtaining $x-2=\pm 6$. Finally, transposing -2 to the second member by adding 2 to each member, which does not destroy the equation, I have $x=8$, and -4." If it is desired to abbreviate the explanation, it is far better to make it simply an outline of the reasons than a mere statement of the process. In this case, an outline of the reasons may be given thus: The object is to disengage x from its connections with other quantities so that it shall stand alone, constituting one member while the other member is a known quantity. The first process is based upon the principle that equals subtracted from equals leave equal remainders; the second, upon the principle that equals divided by equals give equal quotients," etc. Again, while it is admissible when the purpose is to fix attention upon any particular transformation, to omit the reasons for some of those previously studied, it is far better that these be omitted *pro forma*, than that something which is not an exposition of reasons be given. Thus, if the present purpose is to secure drill in the theory of completing the square, after having enunciated the problem, the pupil may say: "Having reduced the equation to the form $x^2-4x=32$," etc., proceeding then to give in full the explanation of the process under consideration. But it is well to allow no recitation on such a subject to pass without having at least one full explanation. These remarks apply to study and recitations designed to give intelligent facility in reducing equations. In what may be called "Applications of equations to the solution of practical problems" the purpose is quite different, and so should be the pupil's explanation. In these, the *statement* is the important thing, and should be made the main thing in the explanation. In most such cases, it will be quite sufficient, if, after having given the reasons for each step in the statement, thus fully explaining the principles on which he has made the equation, the pupil conclude by saying simply: "Solving this equation, I have," etc. Outlines of demonstrations and synopses of topics are exceedingly valuable as class exercises. For example, it requires a far better knowledge of the demonstration of Sturm's theorem to be able to give the following outline than to give the whole in detail: (1) No change in the variable which does not cause some one of the functions to vanish, can cause any change in the number of variations and permanences of the signs of the functions; (2) No two consecutive functions can vanish for the same value of the variable; (3) The vanishing of an intermediate function cannot cause a change in the number of variations and permanences; and (4) The last function cannot vanish for any value of the variable; and, as the first vanishes every time the value of the variable passes through a root of the equation, it by so doing causes a loss of one, and only one, variation. We, therefore, have the theorem [giving the theorem]. Finally, no subject should be considered as mastered by the pupil until he can place upon the blackboard a synoptical analysis of it, and discuss each point, either in detail or in outline, without any questioning or prompting by the teacher. The order of arrangement of topics, *i. e.*, the sequence of definitions, principles, theorems, etc., is as much a part of the subject considered scientifically as are the detailed facts; and the former should be as firmly fixed in the mind as the latter.

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* "Destroy the *value* of the equation", is an absurd expression which we frequently hear. An equation is not a quantity, and hence has no value. The equality of the members is meant.

ALGERIA, a division of N. Africa, which was formerly a Turkish pashalic, but has since 1830 been in possession of the French. The boundaries are not defined, and the tribes dispute the claims of the French to large tracts on the border. The territory claimed by the French is estimated at about 258,317 sq. m.; of which about 150,568 are subject to the civil, and the remainder to military, government. The population according to the census of 1872 was 2,416,225, of whom 245,117 were Europeans and their descendants; 34,574 native Jews; the remainder were Mohammedans. In regard to religion, 233,733 were Catholics, 6,006 Protestants, 39,812 (including those of European descent) Jews, and 140 had made no declaration. The Catholics have an Archbishop and two Bishops; the Protestants three Consistories, under which both the Lutheran and Reformed Churches are placed. In regard to public instruction, Algeria constitutes a division, called the *Academy of Algeria* and headed by a rector. The number of free public schools in 1866 was 426, with 45,375 pupils; for secondary instruction there are four colleges and one Lyceum (at Algiers, Bona, Constantine, Philippeville, and Oran), the secondary institution at Tlemcen, and the free school at Oran. A special system of instruction has been arranged for the Mohammedan population. It comprises the *douar* (village or camp) schools, the law schools (*zaouias*), the schools of law and literature (*medresas*), the French Arabic schools, and the French Arabic colleges. Algiers, the capital, has special schools of theology and of medicine. The educational progress of this country derives a special interest from the fact that it illustrates the influence which the government of a Christian country can exercise upon a Mohammedan dependency.—See BLOCK, *Dictionnaire général de la politique*. A full account of the French laws regulating public instruction in Algeria may be found in GRÉARD, *La Législation de l'Instruction Primaire en France*, tom. III., art. *Algérie*.

ALLEGHENY COLLEGE, at Meadville, Pa., was founded in 1817, and is under the direction of the Methodist Episcopal Church. The number of students in 1874—5 was 132, more than one half of whom were pursuing the collegiate course. It has classical, scientific, and biblical departments, and is open to both sexes. Its library contains about 12,000 volumes. Rev. L. H. Bugbee, D.D., is the president of the faculty.

ALMA MATER (Lat., fostering mother) is a name affectionately given by students of colleges and universities to the institution to which they owe their education.

ALPHABET. The alphabet of any language is the series of letters, arranged in the customary order, which form the elements of the language when written. It derives its name from the first two letters in the Greek alphabet, which are named *alpha, beta*. The letters in the English alphabet have the same forms as those of the Latin language, which were borrowed from the Greek. The Latin alphabet, however, did not contain all the Greek letters. The letters of the Greek alphabet were borrowed from the Phoenician, which was that used by many of the old Semitic nations, and is of unknown origin. It consisted of 22 signs, representing consonantal sounds. Into this alphabet the Greeks introduced many modifications, and the changes made by the Romans were also considerable. Its use in English presents many variations from its final condition in the Latin language. Thus, I and J, and U and V, instead of being merely graphic variations, were changed so as to represent different sounds, during the 16th and 17th centuries. W was added previously, in the middle ages. The twenty-six letters of our alphabet have been thus classified with regard to their history: (1) B, D, H, K, L, M, N, P, Q, R, S, T, letters from the Phœnicians; (2) A, E, I, O, Z, originally Phœnician, but changed by the Greeks; (3) U (same as V), X, invented by the Greeks; (4) C, F, Phoenician letters with changed value; (5) G, of Latin invention; (6) Y, introduced into Latin from the Greek, with changed form; (7) J, V, graphic Latin forms raised to independent letters; (8) W, a recent addition, formed by doubling U (or V), whence its name.

The imperfections of the English alphabet are manifold: (1) Different consonants are used to represent the same sound; as *c* (soft) and *s*, *g* (soft) and *j*, *c* (hard) and *k*, *q* and *k*, *x* and *ks*. (2) Different sounds are expressed by the same letter; as *c* in *cat* and *cell*, *g* in *get* and *gin*, *s* in *sit* and *as*, *f* in *if* and *of*, etc. (3) The vowels are constantly interchanged, as is illustrated in the following table of the vowel elements of the language and their literal representations, the diacritical marks used being those of Webster's Dictionary.

Long.		*Short.*	
ā ẹ	as in ape, they	ĕ	as in end
â ê	" " care, ere	ă	" " hat
ä	" " art	ȧ	" " ask
a̤ ô	" " all, orb	ạ ŏ	" " what, not
ē ï	" " eve, pique	ĭ	" " sit
ẽ ĩ ỹ	" " her, sir, myrrh		
ō	" " old		
o̤ ṳ ōō	" " do, rule, too	ọ ụ ŏŏ	" " wolf, put, book
û	" " urn	ȯ ŭ	" " love, luck
ū	" " use		
ī ȳ	" " ice, my		
oi oy	" " oil, boy		
ou ow	" " out, owl		

From this table it will be seen that the letter *a* is used to represent *seven* different sounds; *e*, *five* sounds; *o*, *six* sounds, etc. (See PHONETICS.) The names given to the letters are not in conformity with a uniform principle of designation. Thus, the names of *b*, *c*, *d*, *g*, *p*, *t*, *v*, and *z* are *be*, *ce*, *de*, *ge*, etc.; while the names of *f*, *l*, *m*, *n*, *s*, and *x* are *ef*, *el*, *em*, *en*, etc.; and the names of *j*, *k*, are *ja*, *ka*. The heterogeneity of these names and of their construction will be obvious. It is important that the teacher should take cognizance of these incongruities in giving elementary instruction, as they dictate special methods of presentation. (See ALPHABET METHOD.)

ALPHABET METHOD, or **A-B-C Method.** This has reference to the first steps in teaching children to read. According to this method, the pupil must learn the names of all the letters of the alphabet, either from an *A-B-C book*, from *cards*, or from the *blackboard;* that is, he must be taught to recognize the various forms of the letters, and to associate with them their respective names. The method of doing this, once very general, was to supply the pupils with books, and then, calling up each one singly, to point to the letters, one after the other, and to pronounce the name of each, so as to associate arbitrarily the form with the name; or, in simultaneous class instruction, to exhibit the letters on separate cards, and teach their names by simple repetition. This process must, of course, be not only long and tedious, but exceedingly dry and uninteresting to a child, since it affords no incentive to mental activity,— no food for intelligence. By a careful selection and discrimination, however, in presenting the letters to the attention of the child, its intelligence may be addressed in teaching the alphabet by this method. The simple forms, such as I, O, X, S, will be remembered much more readily than the others; and these being learned, the remainder may be taught by showing the analogy or similarity of their forms with the others. Thus O becomes C when a portion of it is erased; one half of it with I, used as a bar, forms D; two smaller D's form B; and so on. This method is very simple, and may be made quite interesting by means of the blackboard.

The letters which closely resemble each other in form, such as A and V, M and N, E and F, and C and G, among capitals, and *b* and *d*, *c* and *e*, *p* and *q*, and *n* and *u*, among small letters, should be presented together, so that their minute differences may be discerned. When the blackboard is used (as it should always be in teaching classes), the letters may be constructed before the pupils, so that they may perceive the elements of which they are composed. Thus the children will at once notice that *b*, *d*, *p*, *q*, are composed of the same elements, differently combined,— a straight stroke, or stem, and a small curve. By an appropriate drill, the peculiar forms, with the name of each, will then be soon impressed upon the pupils' minds; and, besides that, their sense of analogy, one of the most active principles of a child's mind, will be addressed, and this will render the instruction lively and interesting. In carrying out this plan, the teacher may use the blackboard, and as a review, or for practice, require the children to copy, and afterwards draw, from memory, on the slate, the letters taught. Cards may also be used, a separate one being employed for each letter. With a suitable frame in which to set them, these may be used with good advantage, the teacher making, and the children also being required to make, various combinations of the letters so as to form short and familiar words. A horizontal wooden bar with a handle, and a groove on the upper edge in which to insert the cards, forms a very useful piece of apparatus for this purpose. *Letter-Blocks* may also be used in a similar manner by both teacher and pupils. These blocks are sometimes cut into sections so as to divide the letter into several parts, and the pupil is required to adjust the parts so as to form the letter. This method affords both instruction and amusement to young children, and at the same time, gives play to their natural impulse to activity. These various methods will be combined and others devised by every ingenious teacher. In some schools a piece of apparatus, called the *reading* *frame*, is used. This is constructed like a blackboard with horizontal grooves, in which the letters can be placed so as to slide along to any required position. By the use of assorted letters, the teacher can construct any word or sentence, building it up letter by letter, as types are set. Many interesting exercises in reading and spelling may be given by means of such an apparatus, the children being required to construct words and sentences themselves, as well as to read those formed by the teacher. The A B C Method of teaching the elements of reading has now, quite generally, been superseded by the Word Method. — See Currie, *Early and Infant School Education*, and *Principles and Practice of Common School Education;* Wickersham, *Methods of Instruction.* (See Word Method.)

ALUMNEUM, or **Alumnat** (Lat., from *alere*, to feed, to nourish), the name given in Germany to an institution of learning which affords to its pupils board, lodging, and instruction. The first institutions of this kind arose in the middle ages in connection with the convents. Among the most celebrated are those founded by Maurice of Saxony, in the 16th century, at Pforta, Meissen, and Grimma. When the pupils were received and instructed gratuitously, they were expected to perform various services for the school and church, such as singing in the choir. The pupils of these schools were called *alumni*. (See Alumnus.)

ALUMNUS, pl. *Alumni* (Lat., from *alere*, to feed, to nourish) originally the name of a student who was supported and educated at the expense of a learned institution (see Alumneum), now generally applied to a graduate of a college or similar institution. The graduates of higher seminaries or colleges for females are sometimes called *alumnæ*.

AMHERST COLLEGE, at Amherst, Mass., is one of the chief seats of learning in the United States. It was founded in 1821 by the Orthodox Congregationalists, especially for the education of young men for the ministry; but its charter was not obtained till 1825. Its first president was the Rev. Zephaniah S. Moore, who in 1823 was succeeded by the Rev. Heman Humphrey, to whose strenuous and prudent efforts the college owed much of its success. He continued in office till 1845, when he was succeeded by the Rev. Edward Hitchcock; and, on the resignation of the latter, in 1854, the present incumbent, the Rev. William A. Stearns, D. D., was elected. This institution has been the recipient of very large donations from private persons, and appropriations from the State amounting to upward of $50,000. The college funds amount in the aggregate to more than $650,000. Its charity fund for the gratuitous education of clergymen amounts to about $70,000; and its fund for free scholarships is at least $100,000. The names of the principal donors to the institution are Dr. William J. Walker, to the extent of $240,000; Samuel A. Hitchcock, $175,000; Samuel Williston, $150,000; and a college church was erected a short time ago from funds contributed for the purpose by W. F. Stearns, son of the president. This institution occupies twelve public buildings, besides the president's house, including an edifice for scientific instruction, and the college church. There are also a gallery of art, a cabinet of natural history, containing about 100,000 specimens, and an astronomical observatory. The department for physical training is very efficient. It comprises an extensive and well appointed gymnasium; and, at a certain hour, each class is required to attend, and engage in exercise under the direction of the professor, who is a thoroughly qualified physician. The faculty includes twenty-three instructors, and there are several endowed professorships. The number of students in 1874 was about 340. The college library contains more than 30,000 volumes; and those of the societies, about 10,000. There is a scientific as well as a classical course; also a post graduate course, established in 1874, in history and political science, with especial reference to a "science of statesmanship;" while any graduate may arrange to pursue a course of study in any department additional to the college course. The tuition fee is $90 per annum.

ANALYSIS, Grammatical, or Sentential.—By the analysis of a sentence is meant a decomposition of it into its logical elements. Every sentence must either be a single proposition, or be composed of propositions more or less intimately related; and every proposition must contain a *subject* and a *predicate*, the former expressing that of which we speak, and the latter, what we say of it. The entire or logical subject must contain a noun or pronoun, either alone or with related words called *modifiers* or *adjuncts*, or it may be a phrase or a clause. The entire or logical predicate, in the same manner, must consist of a verb with or without adjuncts. These constitute all the parts, and all the relations, involved in the construction of a sentence. A few words, such as interjections, may be used independently of them. Grammar has been defined as the "art of speaking and writing correctly," or as the "practical science which teaches the right use of language"; and for general purposes this account is, perhaps, sufficiently explicit. It does not, however, truly distinguish grammar from the other arts concerned in teaching the "right use of language," and hence does not correctly point out its peculiar province. From a want of precision in defining the limitations of any art or science, there must necessarily follow a corresponding inaccuracy and looseness in its treatment; since, before we can reason properly as to the best methods of attaining any object, we must clearly conceive what that object is, and carefully distinguish it from all others.

The special province of grammar does not extend beyond the construction of sentences; but it is quite obvious that to use language correctly, those principles and rules must be understood which underlie the proper method of combining sentences so that they may constitute elegant and logical discourse. A person may be sufficiently familiar with grammatical rules to construct sentences with perfect correctness, but may so arrange them as to express only nonsense; and such a person could scarcely be considered as understanding the "right use of language." The sentence being the peculiar province of grammar, it follows that the only subjects of investigation embraced within it are words, their orthography, inflectional forms, and pronunciation, and their arrangement in sentences. All grammatical definitions and rules are founded upon the relations of the parts of a sentence to each other; and, therefore, these relations should be first taught. It is with reference to these relations, that words are classified into parts of speech, or, as they might properly be called, parts of the sentence. To define or explain these parts of speech before giving any definition of a sentence, is, therefore, clearly illogical; yet this has been the method of many grammarians, words being explained and *parsed* as if they had only individual properties. It is in this that the distinction between parsing and grammatical analysis consists. Both are, in fact, only different kinds of analysis, and are based on precisely the same relations,—those in which the words stand to each other as parts of a sentence.

Parsing, as uniformly employed by grammarians, is a minute examination of the individual words of a sentence, with the view to determine whether the rules of grammar, proper to the particular language in which the sentence is written, have been observed or violated. Analysis, on the other hand, deals with the relations upon which those rules are based, and which are common to all languages. Thus, in parsing, the pupil is obliged to scrutinize all the inflectional forms in which the words composing the sentence are used; and, in order to determine whether they are proper or not, must not only know the rules of syntax, but the relations of the words to each other, so as to be able to apply those rules. The relations are invariable in all languages, but the rules which refer to the inflections are founded on particular usage, and hence are in no two languages exactly alike. On this account, since the *general* logically precedes the *special*, the treatment of sentential analysis should precede any exercises in parsing. Otherwise, how, for example, could a pupil be required to distinguish the cases of nouns and pronouns, and the person and number of verbs, before being taught the relations of the words to each other?

By means of the analytical method, when rightly applied, the study of grammar is made clear, logical, and easy from the very beginning. The pupil is first taught the nature of the sentence, its essential parts, and their relations to each other, and is shown how to analyze sentences of a simple character. He is troubled with but little phraseology; for all the terms that are essential to the complete distinction and designation of the parts of a sentence are *subject*, *verb* or *predicate*, *object*, *attribute*, and *adjuncts*. These being defined, and the pupil taught how to distinguish them, a complete foundation has been laid for the intelligent study of all other grammatical terms and distinctions; and this being the foundation, should, of course, be the first thing done. Those who oppose the analytical method assert that words are the real elements of a sentence, and that any consideration of these involves, therefore, an exhaustive analysis of the sentence itself. With the same propriety might it be said that pieces of iron of various shapes are the elements of the steam-engine. They indeed compose the machine, and it can ultimately be resolved into them; but could its structure and workings be explained by taking these fragments of metal in a hap-hazard way, and noticing how they are related to others in immediate juxtaposition, without regard to the general structure of the machine, and the dependence of its operation upon a few elementary or primary parts, as the cylinder, piston, condenser, etc.? Words are not necessarily the real elements of a sentence. These are the subject and predicate and their adjuncts; and, unless these component parts of the general structure be first observed, the relations of the separate words cannot be understood. Hence, we find that those writers who have ignored a definite consideration of these logical elements, have fallen into many errors and inconsistencies.

The various systems of analysis in use differ in no essential respect, the chief variation being in the nomenclature employed to designate the elements of the sentence. The name generally applied to a proposition forming a part of a sentence is a *clause*, and any group of related words not making a proposition is called a *phrase*. The modifying elements are by some called *adjective* or *adverbial*, according as they perform the functions of adjectives or adverbs. Instead of the term *adjective*, *adnominal* is sometimes employed. The term *adjunct* is generally employed to designate an element subordinate to either subject or predicate. Such adjuncts may be *modifying*, *descriptive*, or *appositional*. A modifying adjunct changes the meaning of the element to which it is applied, generally, by making it more specific, or by restricting the class to which it belongs. Thus *animal* is a more general term than *four-footed animal*; hence *four-footed* is a modifying adjunct. But the term *man* is no more general than *man that is born of a woman*, or *mortal man*; the adjuncts, *that is born of a woman* and *mortal* being only descriptive, not modifying. Appositional adjuncts only explain; as: *He, the chieftain of them all*, in which the phrase, *the chieftain, etc.*, is only explanatory, or appositional. Adjuncts may be single words, phrases or clauses; and one of the chief advantages of sentential analysis is to show the pupil that groups of words are often used so as to perform the same office as single words. In teaching this subject, a proper gradation of topics should be observed; and much caution exercised to avoid the perplexing of the young pupil by presenting to his mind distinctions too nice to be discerned by his undeveloped powers of analysis. Various methods have been devised in order to present to the eye of the student the analyzed sentence, so as to show clearly the relation of its parts; and, in the rudimental stages of the instruction, these are, without doubt, of considerable utility; but they should not be carried so far as to present to the student a confused mass of loops, lines, curves, or disjointed phrases, far more difficult to disentangle than to analyze, without any such aid, the most involved sentence. All such devices, it must be remembered, are only auxiliaries to the mind's natural operations, and cannot at all supersede them. Neither should the exercise of analyzing sentences be allowed to degenerate into the mechanical application of its most simple requirements. As the student advances, he will be able to omit more and more of the routine, until he reaches a stage of progress, at which the general structure of the sentence—its component clauses and their relations, will be all that he need observe or state. When judiciously and rationally employed, sentential analysis must engender a very important quality of mind, and greatly conduce to clear thinking, intelligent, critical reading, and accurate, terse expression. — See MULLIGAN, *Grammatical Structure of the English Language* (N. Y., 1852); GOOLD BROWN, *Grammar of English Grammars*, and *Institutes of English Grammar*, with KIDDLE'S *Analysis*; WELCH, *Analysis of the English Sentence*; GREENE, *Analysis of the English Language*; CLARK, *Normal Grammar of the English Language*; CRUTTENDEN, *Philosophy of Sentential Language*; MARCH, *Parsing and Analysis*; ANDREWS and STODDARD, *Latin Grammar*.

ANALYSIS, Mathematical. See MATHEMATICS.

ANALYTIC METHOD OF TEACHING. This is the method used by the teacher when he presents to his pupils composite truths or facts, and by means of analysis shows the principles involved, or leads the mind of the pupil to an analysis of them for himself. In this way he teaches principles which the pupil is to apply to the elucidation of many diverse problems. In the synthetic method, the teacher begins with principles, explains their meaning, and shows how they are to be applied. Thus, suppose the pupil is to be taught how to add and subtract fractions. According to the analytic method, the fractions to be operated upon are presented to the pupil's mind, and he is shown, first the difficulty involved, and secondly, how to surmount this difficulty, by (1) finding a common denominator, and (2) by changing the numerator so that the fractions with the common denominator may have the same value as the given fractions. Then the method of addition or subtraction becomes obvious. In this way learning the principle himself by analysis, the pupil is enabled to construct a general rule, and apply it to any given case. In the synthetic method, the pupil would be taught in the first place the nature and use of a common denominator, then the method of reducing fractions to a common denominator, and then to add or subtract fractions by finding a common denominator. If the object of the instruction given were, exclusively, to make the pupil expert in adding and subtracting fractions, the synthetic method would perhaps have some advantage over the analytic; but, since an important part of this object is to train the mind, the analytic method is greatly to be preferred; for (1) it stimulates the mind to greater activity, (2) it teaches it how to investigate for itself, and to discover truth, and (3) it gives it a much clearer knowledge of the fundamental principles involved in the subject taught. Whether the analytic method should be employed and to what extent, is to be determined by a consideration of the nature of the subject taught, and the degree of advancement of the student. In the higher stages of education, much time would be lost by rigorously following this method; and if, in the more elementary stages, the pupil's mind has been thoroughly trained in this way, it will not be necessary to adhere to it when he comes to study the higher branches. At every stage, and in every branch of instruction, however, there will be occasion for the use of both analysis and synthesis; and the skill and judgment of the teacher must be exercised, at every step, to determine which is the appropriate method to be employed. — See PALMER, *The Teacher's Manual* (Boston, 1840).

ANDREÆ, Johann Valentin, a German clergyman and educator, was born at Herrenberg, in Würtemberg, in 1586, and died in Stuttgart, in 1654. After filling several ecclesiastical positions in the Lutheran church of his country, he became, in 1650, Superintendent General at Babenhausen, and in 1654 at Adelberg. He was a stern and influential opponent of the principles which the Lutheran orthodoxy, at that time, endeavored to carry out in education. He denounced, in particular, the mechanical method of teaching Latin, which then prevailed, as well as the equally mechanical method of catechetical instruction in the public schools; and he is known, in the history of German education, by the reforms which he introduced in these studies. He insisted that no orders should be given to the pupils in a foreign language, that they should not be required to learn any thing which they did not understand, and that no explanations should be given to them exceeding their comprehension, or not enlisting their interest. His views on pedagogical and didactical reform are fully developed in the work *Reipublicæ Christianæ Descriptio* (1619), which sketches the constitution of an ideal Christian republic, giving due prominence to the organization of education. Another work, written in his youth, *Idea Bonæ Institutionis*, is no longer extant. Andreæ was an intimate friend of Amos Comenius, whose work, *Didactica Magna*, he earnestly recommended. The autobiography of Andreæ in Latin has been published by Rheinwald (Berlin 1849). — See SCHMIDT, *Geschichte der Pädagogik*, III, 338; HOSSBACH, *Andreæ und sein Zeitalter* (Berlin, 1830); HENKE in *Deutsche Allgemeine Biographie*, art. *Andreæ*.

GLO-SAXON is the current name for other-tongue of the modern English lan-. During the 5th and 6th centuries, tribes the shores of the North Sea.— Angles, s, Jutes, and others, made conquests and nents in England. They spoke Low German ts, and after they were converted to Chris-r. Roman alphabetic writing was intro-, and a single literary language came into rough the whole nation. This language ommonly called *Anglise*, or *Englise*, i. e. *sh*, but since the 17th century it has been *Anglo-Saxon*. its best period was the of Alfred the Great, A. D. 871—901. careful study of its literary remains, it is ary to distinguish three dialects, the North-an, the West Saxon, and the Kentish; and periods, the early, the middle, and the late; this article, our attention will be mainly d to classic Anglo-Saxon, which is West of the middle period. This literary lan-was cultivated mainly by rewriting in it, e use of the people, the best Latin works time on religion, history, and philosophy. Alfred and his learned assistants thus pre-Gregory's *Pastorale;* the *General History* sius, the *Ecclesiastical History* of Bede, the *lations of Philosophy* of Boethius; and were followed by many other translations se and verse. The language in this way ed accuracy and ease in following Latin sitions, and a higher general cultivation any other Teutonic tongue of the time. a very pure Low German speech, closely o the Friesic, Old Saxon, and Dutch. These erman tongues are most nearly related, on e side, to High German, and on the other andinavian: and more remotely to Latin, , Slavic, Sanskrit, and the other Indo-ean or Aryan languages. The Anglo-is to be classed with the older inflected or etic languages, like the Latin, Greek, and it, rather than with the analytic, or little-ed, like French and English. The noun ve cases, and three genders; and four de-ons growing out of differences in the stems. djective is declined as in German, in a te and an indefinite declension, with two ers, three genders, and five cases. The al pronouns are also fully declined in numbers, having special forms for the dual er in the first and second persons. There wo great classes of verbs, one of which the past tense by reduplication, and the by composition with *dide*, did. In the lass are five conjugations, arranged accord-their root vowels, and from these come of what are called the irregular verbs of m English: our regular verbs come from the conjugation. Our suffixes of derivation, repositions, and conjunctions are also in part Anglo-Saxon. The syntax is of that of a highly inflected language. Some govern an accusative, some a dative or in-ental, some a genitive, some two accusa-some an accusative and dative, and so on as in Latin and Greek. The uses of the modes are also a matter of great nicety. The body of rules for the use of the subjunctive rivals that for the Latin subjunctive. Most of the difficulties of English syntax find their solution in the fact that they are relics of idioms which were general, and are easily understood, in Anglo-Saxon. The laws of sound, including prosody, are noteworthy. The vowel sounds are very susceptible to the influence of adjacent letters. A root *a* will change to *ae*, *ea*, *e*, *o*, as one or another letter follows it; and so with the other vowels. It is in this way that the plural of *man* comes to be *men*, from *mani*. And, in general, the changes of the original letters of an English word in inflection are to be explained from the phonetic laws of Anglo-Saxon. The verse, like that of the other early Teutonic nations, is accentual, and marks off the lines by alliteration. The art of poetry was highly cultivated; the *scóp*, or poet, was highly honored, and it was a disgrace to any man not to be able to sing in his turn at the feasts. We have specimens of the old ballad epic reaching far back into heathen antiquity, the Iliad and Odyssey of the North. There is also a body of Christian poetry in similar verse and in somewhat similar style.

From this sketch of the language and its literature it will appear, that whatever disciplinary advantages are to be gained from the study of an inflected tongue as such, or of a literature introducing us to a new world of thought and manners, are to be gained as well from the study of Anglo-Saxon as of Latin or Greek. It has, however, additional and more intimate uses to those who speak and write English, and have English for their foster-mother in literature. It is the mother of our mother-tongue, and the knowledge of it helps us at every step in our study of English grammar and literature, and is essential to any really advanced scholarly knowledge of either. We may, therefore, find a place for Anglo-Saxon in all grades of schools in which language and literature are studied, using it in different ways at different stages of progress.

The study of language must always occupy a chief place in any comprehensive educational scheme. It has two great divisions: (1) as the study of the art of communication, (2) as the study of the record of human thought. Without the art of communication, man cannot live; without access to the accumulated thought of the race, any generation would be savages; without an introduction to the emotions and ideals of the great and noble which are embodied in literature, any generation would lapse toward moral idiocy.

Common Schools.—The Anglo-Saxon is no longer spoken, and it would be hardly worth while to learn to speak it; but in learning to speak and write English we need to know much of it. The power to speak well is founded on familiarity with choice idioms and synonyms. These are learned in connection with the history of the formation and meanings of words, and especially in English, of our Anglo-Saxon words.

There are several school etymologies which afford manuals of practice in the study and use of the Anglo-Saxon elements of our speech, among which may be mentioned: *Hand-Book of Anglo-Saxon Root-Words* (New York); *Hand-Book of Anglo-Saxon Derivatives* (New York); GIBBS'S *Teutonic Etymology* (New Haven); SARGENT'S *School Manual of English Etymology* (Phila.). In these books the pupil is told the meanings of certain Anglo-Saxon words, prefixes, and suffixes, and of English words which are derived from them; and exercises are arranged in which to acquire skill in the ready use of this knowledge. They are intended for the Common School. HALDEMAN'S *Affixes* (Phila.) is a treasury of this branch of learning.

In the *High School* or *Academy*, Anglo-Saxon is to be read and studied not only as explanatory of English, but for its own structure and literature, just as Latin, Greek, and German are studied. Manuals for this study in its simplest form contain brief grammars, selections for reading, notes, and vocabulary. — Such books are S. M. SHUTE'S *Anglo-Saxon Manual* (N. Y.); BARNES'S *Anglo-Saxon Delectus* (London); VERNON'S *Guide to the Anglo-Saxon Tongue* (London); CARPENTER'S *Introduction to the study of the Anglo-Saxon Language* (Boston). Similar to these, but containing more apparatus for a comparative study of the language and philological notes, are MARCH'S *Introduction to the Anglo-Saxon Language* (N. Y.); MORRIS'S *Elementary Lessons in Historical English Grammar, containing Accidence and Word Formation* (London).

Normal Schools.—There are no persons to whom this study is more important, than to teachers of English grammar. The explanations of the forms of words are all to be sought in it. The origin and meaning of the possessive ending *'s*, of the plural endings, of the endings for gender, of the tense forms and other forms of the verb, the adverbial endings, the prepositions, may at any time be demanded of the teacher. Pupils will ask him whether *John's book* is a contraction of *John his book;* how comes *geese* to be the plural of *goose*, and *men* the *plural* of *man;* how comes *lady* to be the *feminine* of *lord;* how comes *I have loved* to express the perfect tense; what does the *to* mean when you say *to be, or not to be, that is the question*, and so on without end. But such questions cannot be answered without knowing Anglo-Saxon. It is the same with questions of syntax. Almost all difficulties grow out of Anglo-Saxon idioms, or find their solution in the forms of that speech. Teachers who know nothing of the history of the language puzzle themselves infinitely with subtle reasonings to prove that expressions must be parsed in one way or another, when a glance at an Anglo-Saxon grammar would settle the matter in a moment. No teacher can safely pronounce on any such mooted questions of our language without knowing the Anglo-Saxon forms. No normal school ought to send out graduates from its grammar department wholly ignorant of this study. A lesson a day during the last school term skillfully directed to the most frequent examples in which this knowledge comes into use, would perhaps answer the most pressing necessities of the common school teacher. Twice that time would be a meager allowance to lay the foundation of the education of an accomplished high-school teacher in this department. For this study may be used MARCH'S *Comparative Grammar of the Anglo-Saxon Language* (New York); — this contains a full syntax; R. MORRIS'S *Historical Outlines of English Accidence* (London); HADLEY'S *Brief History of the English Language*, in Webster's Dictionary (1865).

Colleges and Universities. — The earliest important use of Anglo-Saxon in our schools was that introduced by President Jefferson into the University of Virginia, in 1825. He thought that it was a rude form of colloquial English disguised by bad spelling, and that the whole grammatical system as given in the text-books was a series of "aberrations into which our great Anglo-Saxon leader, Dr. Hickes, has been seduced by too much regard to the structure of the Greek and Latin languages." "Remove," he says, "the obstacles of uncouth spelling and unfamiliar character, and there would be little more difficulty in understanding an Anglo-Saxon writer than Burns' poems." He proposed to have text-books prepared, in which the original Anglo-Saxon should be accompanied by a parallel column containing the same matter respelt into modern English or forms like the modern English, and by explanations of the meaning of unusual words. These he thought would be few, so that the whole tongue might be mastered with great ease and rapidity. These views of the language are all wrong; the best Anglo-Saxon manuscripts are really spelt on a more careful and more scientific system than our modern English. The language, really, is an inflected language, like Latin and Greek, having its case-endings and other inflective forms from the same original as those sister-speeches. Of course, no one has carried out Mr. Jefferson's plan literally. One of its suggestions has, however, been embodied in MARCH'S *Introduction to Anglo-Saxon* (New York). An early division of the prose is prepared in parallel pages of Anglo-Saxon, and a sort of English made by giving for each Anglo-Saxon word the corresponding English word to which it has given rise, if there be any, or a kindred English word. The following is a specimen:

Se leornere segeth: Wê cildru biddath thė, eâlà lâreôw, thaet thû tâece ûs sprecan on Ledenė gereordė rihte, fortham ungelâerede wê sindon, and gewemmedlice wė sprecath.

(The learner saith: We childer[1] bid[2] thee, O-lo lore-*master*, that thou teach us *to*-speak in Latin i-rerd[3] right, for-that[4] un-i-lered[5] we are, and i-wemmedly[6] we speak.)

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[1] children (Chaucer). [2] pray. [3] language (Halliwell). [4] because. [5] unlearned (Stratmann). [6] corruptly, from *wem*, a spot.

An extract from the poetry of Caedmon is prepared in the same manner. It will be seen that this affords an easy introduction to a general knowledge of the Anglo-Saxon vocabulary, and is a grateful means of enabling beginners who wish only to read in an off-hand fashion, to get a fair knowledge of the contents of Anglo-Saxon books, especially of simple prose, and makes a good beginning for grammatical and philological study.

There has been a great increase of Anglo-Saxon study in our colleges within the last ten years. From being almost unknown, and wholly unprovided with any suitable apparatus, it has become a common study, and a number of manuals have been published for beginners in it, both in America and Europe. There is a difference of opinion among our educators as to whether it should be studied early in the college course and in connection with English simply, or later and in connection with Latin, Greek, and German; whether it should be mainly a literary study, for reading and the vocabulary, or chiefly a grammatical and philological study. The earliest of the later text-books announced for publication was a *Comparative Grammar* by F. A. March, Prof. of the English Language and Comparative Philology in Lafayette College. This was primarily intended for the use of a Junior Class in college, who have already studied Latin, Greek, French, and German, according to a progressive plan by which each language is compared with the others in its grammatical forms and analogous words, so that when beginning Anglo-Saxon, the students are good comparative grammarians within the range of the above languages. It is the plan of this grammar to compare the Anglo-Saxon with Sanskrit, Greek, Latin, Gothic, Old Saxon, Old Frisic, Icelandic, and Old High German. General principles of phonology, enough to cover all the changes of sound, are first laid down, and then parallel paradigms of the inflection forms in these languages are given, and the Anglo-Saxon explained under their guidance. A comparative syntax is also given. The author in this way introduces the student to the methods of the modern science of language in connection with the study of Anglo-Saxon, so that our mother-tongue may share the honors of this new science. This grammar was followed by a *Reader*, which is prepared with notes adapted to lead to and aid in the study of the grammar. These books have been since studied at Lafayette College in the manner here suggested. A class goes slowly on with the reader and grammar together, studying, word by word, letter by letter, the relations of the forms to those of other languages, and the laws of change which govern their history, and trying to ground all in the laws of the mind and of the organs of speech. Besides this grammatical study, however, the substance of the selections is carefully studied, including choice extracts from the Anglo-Saxon Chronicle and Beda giving the noticeable events of history, Anglo-Saxon laws, and extracts from the great poets. In method and substance, as thorough and scientific study is given in this way to a portion of the Anglo-Saxon as can be given to Greek or Latin with the ordinary college text-books. The study is pursued in this way at several of the American colleges. In others, rapid reading for literary purposes prevails. The text-books used are March's *Grammar* and *Reader*, as above, in which are also bibliographical notes, and a sketch of the literature; Shute's *Anglo-Saxon Manual;* Klipstein's *Anglo-Saxon Grammar* (New York); Corson's *Anglo-Saxon and Early English* (New York); Thorpe's *Analecta Anglo-Saxonica* (London); Carpenter's *Introduction to Anglo-Saxon* (Boston).

Nowhere else is this study pursued as in America. It is almost wholly neglected in the English universities. Nine German universities announced lectures on it for the winter semester of 1874—5.

Dictionaries of Anglo-Saxon are Bosworth's (London); Ettmueller's *Lexicon Anglo-saxonicum* (Quedlinburg & Leipsic, 1851),—an etymological dictionary. Other valuable works of reference or for further reading are Thorpe's *Beowulf*, with translation, notes, and glossary (London); Grein's *Beowulf*, with German glossary (Cassel, 1867); Heyne's *Beovulf*, with German notes and glossary (Paderborn, 1873); Thorpe's *Gospels* (London); Bosworth's *Four Versions of the Gospels* (London); E. Mætzner's *Englische Grammatik* (Berlin, 1860—65); C. F. Koch's *Historische Grammatik der englischen Sprache* (Weimar, 1863—71); Marsh's *English Language, and its Early Literature* (New York, 1862); Morley's *English Writers* (London, 1867); Wright's *Biog. Brit. Literaria* (London, 1842); Ettmueller's *Scôpas and Bôceras* (Qued. & Leips., 1850); C. W. M. Grein's *Bibliothek der angelsächsischen Poesie* (Cassel & Göttingen, 1857—1864); Grein's *Bibliothek der angelsächsischen Prosa* (Cassel, 1872); Grein's *Sprachschatz der angelsächsischen Dichter* (Cassel & Göttingen. 1864); and articles in Appleton's *New American Cyclopædia*, and Johnson's *New Universal Cyclopædia*.

ANSELM, of Canterbury, a saint and doctor of the Roman Catholic Church, is regarded as one of the founders of scholasticism. (See Scholasticism.) He was born at Aosta, in Piedmont, about 1033, entered, after a dissolute youth, the Benedictine order in 1060, succeeded, in 1063, Lanfranc as prior of the monastery of Bec in Normandy, and, in 1079, became abbot. He was, in 1093, consecrated archbishop of Canterbury, and died in 1109. The school of Bec became, through him, the most famous of the age. He endeavored to show the entire harmony between faith and science, and was the first to develop what is called the *ontological* argument to prove the existence of God. He was a determined and effective opponent of the discipline which at that time prevailed in the monasteries, and which even allowed abbots to cudgel disobedient monks. "A fine education," he once replied to an abbot, who complained of the inefficiency of his educational efforts, "which educates man to animals! Because they receive from you no mark of love and kindness, they mistrust you, suspect you of malignity and hatred, and can only face you with lowered looks and averted eyes." An edition of Anselm's complete works, also containing his life, by his friend and companion Eadmer, was published, in 1744, in Venice (*Opera omnia.* 2 vols.).—See Mœhler, *Anselm's Leben und Schriften* (*Tüb. Quartalschrift*, 1826, 1827); Hasse, *Anselm von Canterbury*, (2 vols., 1843—52; an abridged English translation by Turner, London, 1860); Ch. de Rémusat, *St. Anselme de Cantorbéry* (Paris, 1852).

ANTIOCH COLLEGE, at Yellow Springs, Green Co., Ohio, was incorporated in 1852. Its buildings, which were erected at a cost of $150,000, have a pleasant and healthful situation. This institution is designed to afford the means of a useful education, at small expense, to both sexes. Its charter forbids the teaching of sectarian dogmas; but the instruction is given in consonance with the spirit of liberal Christianity. Its first president was Horace Mann (1853—59). He was succeeded by Thomas Hill, D. D. (1859—62), George W. Hosmer, D. D. (1866—72); and since then, the college has been under the direction of Prof. Edward Orton and Samuel C. Derby, A. M., acting presidents. Its endowment is upward of $120,000. It has a preparatory and collegiate department; and students are permitted to select any studies from its curriculum which they are able to pursue with advantage, and receive a certificate for the same, after passing a satisfactory examination. In this respect, the institution affords the advantages of the best academies. It has a musical institute under the supervision of the faculty, and a library of 5000 volumes. The number of students in 1874 was about 100. The co-education of the sexes has been very successful in this institution. The annual tuition fee is $37.

ANTIPATHY. This term, the opposite of *sympathy*, denotes the instinctive dislike which is felt towards some persons on account of certain peculiarities of temperament, disposition, manners, etc. The natural characteristics of different persons show remarkable diversities in this respect. Some seem to exert a kind of magnetic influence, which attracts and engages others, and by means of which they immediately gain the good-will and affection of those with whom they are brought into communication. Others, on the contrary, appear to repel, as it were, all who approach them, and are obliged, therefore, to make special effort to secure the confidence and good-will of their associates. Frankness and candor tend to inspire confidence; while an exhibition of reserve and shyness produces aversion and distrust. Shy, secretive persons strive to avoid others, and are instinctively avoided. They naturally produce antipathy. Hatred is engendered in the mind towards those who commit positive acts of injury, wrong, or crime; but this is to be distinguished from antipathy, which is an instinctive dislike. Such a feeling is apt to exist on a first acquaintance only, and is often dismissed subsequently as a prejudice. No person can succeed in teaching children, who possesses an unfortunate temperament or mental constitution of this kind, and such a one should seek other employment; since all real success in practical education, depending as it does upon inspiring the minds of pupils with love, esteem, and confidence, must be founded upon the opposite quality, *sympathy*. (See Sympathy.)

APHORISMS, Educational. The expression of general truths in the form of aphorisms has some advantages over more extended statements, particularly in their brevity, pithiness, and point. The understanding grasps them as the keys to practical rules, and as guides in conduct; and the memory more readily retains them. It is not, however, to the uninformed, untrained mind, that such expressions are of the greatest use, but to those who, having already acquired by experience and reflection a good store of facts and ideas upon the subject treated, are glad to find them concentrated, as it were, in these small and convenient verbal repositories. No subject is richer in such aphorisms than education; and to no one will their study and acquisition prove more serviceable than to the practical teacher, eager to avail himself of the treasured experience of others. In these scintillations of wisdom, struck out from the minds of ancient and modern sages, philosophers, and educators, will be found an illumination sufficient perhaps to guide the humble explorer in the field of pedagogical lore, to the true path to professional success, as well as to the temple of speculative and practical truth. The few here given have been selected not only for their appositeness, but for their value as the exponents to correct education and teaching. Their arrangement by topics will not only serve to divest them collectively of their fragmentary character, but render them easy of reference and application. In regard to the value of aphorisms in general, Coleridge remarks: "Exclusively of the abstract sciences, the largest and worthiest portion of our knowledge consists of aphorisms; and the greatest and best of men is but an aphorism."

I. Value of Education.

Man cannot propose a higher or holier object for his study than education and all that pertains to education.—Plato.

Man becomes what he is principally by education, which pertains to the whole of life.—Plato.

Man becomes what he is by nature, habit, instruction; the last two together constitute education, and must always accompany each other.—Aristotle.

There is within every mind a divine ideal, the type after which he was created, the germs of a perfect person; and it is the office of education to favor and direct these germs.—Kant.

Man is the product of his education. — Helvetius.

A right-directed system of education is a moral power in the mind, second only to that creating energy that formed and sustains in existence its material frame-work.—A. B. Craig.

Of all the men we meet with, nine parts out of ten are what they are, good or evil, useful or not, by their education.—LOCKE.

Education is to inspire the love of truth, as the supreme good, and to clarify the vision of the intellect to discern it.—H. MANN.

Education is the one living fountain which must water every part of the social garden, or its beauty withers, and fades away.—E. EVERETT.

II. Scope of Education.

The object of education is not external show and splendor, but inward development.—SENECA.

A good education consists in giving to the body and the soul all the perfection of which they are susceptible.—PLATO.

Education can improve nature, but not completely change it.—ARISTOTLE.

The object of the science of education is to render the mind the fittest possible instrument for discovering, applying, or obeying the laws under which God has placed the universe.—WAYLAND.

The first principle of human culture, the foundation-stone of all but false, imaginary culture, is, that men must, before every other thing, be trained to do somewhat. Thus, and thus only, the living force of a new man can be awakened, enkindled, and purified into victorious clearness.—CARLYLE.

The object of education ought to be to develop in the individual all the perfection of which he is capable.—KANT.

I call that education which embraces the culture of the whole man, with all his faculties—subjecting his senses, his understanding, and his passions to reason and to conscience.—FELLENBERG.

I call a complete and generous education that which fits a man to perform justly, skillfully, magnanimously, all the offices, both private and public, of peace and war.—MILTON.

All true education is a growth; the mind is not a mere capacity to be filled like a granary; it is a power to be developed.—J. P. WICKERSHAM.

The object of education is rather to form a perfect character, than to qualify for any particular station or office.—A. POTTER.

The educator should not so much form and instill, as develop and call out.—MICHAELIS.

The school is a manufactory of humanity.—COMENIUS.

III. Teacher and Pupil.

Nature without instruction is blind; instruction without nature is faulty; practice without either of them is imperfect.—PLUTARCH.

The fittest time for children to learn anything, is when their minds are in tune, and well-disposed to it.—LOCKE.

Let the tutor make his pupil examine and thoroughly sift every thing he reads, and lodge nothing in his head upon simple authority and upon trust.—MONTAIGNE.

Let the child learn what is appropriate for his years, and not precociously what he ought to learn afterwards.—ROUSSEAU.

To learn is to proceed from something that is known to the knowledge of something unknown.—COMENIUS.

Perverseness in the pupil is often the effect of frowardness in the teacher.—LOCKE.

The great skill of a teacher is to get and keep the attention of his scholar; whilst he has that, he is sure to advance as fast as the learner's ability will carry him.—LOCKE.

It is the teacher's character that determines the character of the school; not what he does so much as what he is. The maxim is a true one: As is the teacher, so is the school.—J. CURRIE.

Teachers should observe the following rules:—

1. Never to correct a child in anger.
2. Never to deprive a child of anything without returning it.
3. Never to break a promise.
4. Never to overlook a fault.
5. In all things, to set before the child an example worthy of imitation.—WILDERSPIN.

It matters not how learned the teacher's own mind may be, and how well replenished with ideas, and how widely soever he sees them, there is a power beyond this necessary, to produce copies of these ideas on the minds of others.—A. R. CRAIG.

Those studies should be regarded as primary, that teach young persons to know what they are seeing, and to see what they otherwise would fail to see.—J. S. BLACKIE.

Long discourses and philosophical reasonings, at best, amaze and confound, but do not instruct children.—LOCKE.

It is as important *how* children learn, as what they learn.—DR. MAYO.

A skillful master who has a child placed under his care, will begin by sounding well the character of his genius and natural parts.—QUINTILIAN.

Rules should not be set before examples.—COMENIUS.

Actual intuition is better than demonstration.—COMENIUS.

At first it is no great matter how much you learn, but how well you learn it.—ERASMUS.

Study is the bane of childhood, the aliment of youth, the indulgence of manhood, and the restoration of age.—W. S. LANDOR.

A teacher ought to know of every thing much more than the learner can be expected to acquire. He must know things in a masterly way, curiously, nicely, and in their reasons.—E. EVERETT.

The teacher should create an interest in study, incite curiosity, promote inquiry, prompt investigation, inspire self-confidence, give hints, make suggestions, and tempt pupils on to try their strength and test their skill.—J. P. WICKERSHAM.

There is frequently more to be learned from the unexpected questions of a child, than from the discourse of men who talk in a road, according to the notions they have borrowed and the prejudices of their education.—LOCKE.

From every thing noble the mind receives seeds, which are vivified by admonition and instruction, as a light breath kindles up the spark in the ashes.—SENECA.

Curiosity in children is but an appetite after knowledge; and, therefore, ought to be encouraged in them, not only as a sign, but as the great instrument nature has provided to remove that ignorance they were born with.—LOCKE.

Clearness of ideas must be cultivated by exercising the intuition, and the pupil must be educated to independent activity in the use of his own understanding.—SENECA.

Ideas before words; principles before rules; the judgment before the memory; incidental information before systematic; reading before spelling; the sounds of the letters before their names; and, on the whole, nature before art.—A. R. CRAIG.

The school should cautiously beware of making sacrifice to the arrogant requirements of the spirit of the age; which, when it takes a wrong direction, promotes nonsense, and desires to study by steam.—Stoy.

Arouse in the child the all-powerful sense of the universe, and the man will raise himself above the world; the eternal over the changeable.—Richter.

The process of enlightening the mind should not be like lightning in the night, giving a strong light for a moment, but only blinding by it, and then leaving every thing dark again; but like daybreak, which renders every thing gradually light.—J. A. Fischer.

Human perfection is the grand aim of all well-directed education: the teacher should have ever present with him his ideal man whose perfections he would realize in the children committed to his care, as the sculptor would realize the pure forms of his imagination on the rough marble that lies unchiseled before him.—J. P. Wickersham.

IV. Training and Habit.

Train up a child in the way he should go, and when he is old he will not depart from it.—Solomon.

Training is developing according to an idea.—Schwarz.

No teaching or lecturing will suffice without training or doing.—Stow.

You cannot by all the lecturing in the world enable a man to make a shoe.—Dr. Johnson.

Nature develops all the human faculties by practice, and their growth depends upon their exercise.—Pestalozzi.

The intellect is perfected not by knowledge, but by activity.—Aristotle.

The end of philosophy is not knowledge, but the energy conversant about knowledge.—Aristotle.

The great thing to be minded in education is, what habits you settle.—Locke.

Infinite good comes from good habits; which must result from the common influence of example, intercourse, knowledge, and actual experience: morality taught by good morals.—Plato.

It is habit which gives men the real possession of the wisdom which they have acquired, and gives enduring strength in it.—Pythagoras.

A man is not educated until he has the ability to summon, on an emergency, his mental powers in vigorous exercise, to effect his proposed object.—D. Webster.

The great result of schooling is a mind with just vision to discern, with free force to do; the grand schoolmaster is Practice.—Carlyle.

Habit is a power which it is not left to our option to call into existence or not; it is given to us to use or abuse, but we cannot prevent its working.—J. Currie.

The mind, impressible and soft, with ease
Imbibes and copies what she hears and sees,
And through life's labyrinth holds fast the clew
That education gave her, false or true.—Cowper.

V. Development of the Faculties.

All our knowledge originates with the senses, proceeds thence to the understanding, and ends with the reason, which is subordinate to no higher authority in us, in working up intuitions, and bringing them within the highest unity of thought.—Kant.

The power of reflection, it is well known, is the last of our intellectual faculties that unfolds itself; and, in by far the greater number of individuals, it never unfolds itself in any considerable degree.—D. Stewart.

Clearness of ideas must be cultivated by exercising the intuition, and the pupil must be educated to independent activity in the use of his own understanding.—Niemeyer.

The laws which govern the growth and operations of the human mind are as definite, and as general in their application, as those which apply to the material universe; and a true system of education must be based upon a knowledge and application of these laws.—J. Henry.

Knowledge begins with perception by the senses; and this is, by the power of conception, impressed upon the memory. Then the understanding, by an induction from these single conceptions, forms general truths, or ideas; and lastly, certain knowledge arises from the result of judgments upon what is thoroughly understood.—Comenius.

The mind may be as much drawn into a habit of observation and reflection from a well-directed lesson on a pin, as from the science of astronomy.—A. R. Craig.

During early childhood enough is done if mental vivacity be maintained.—I. Taylor.

The conceptive faculty is the earliest developed, and the first to reach its maturity; it moreover supplies materials and a basis for every other mental operation.—I. Taylor.

VI. Language.

Things and words should be studied together, but things especially, as being the object both of the understanding and of language.—Comenius.

He who has no knowledge of things will not be helped by a knowledge of words.—Luther.

The signs of thought are so intimately associated with thought itself, that the study of language, in its highest form, is the study of the processes of pure intellect.—E. Everett.

Speech and knowledge should proceed with equal steps.—Comenius.

We cannot express in words the thousandth part of what we actually think, but only a few points of the rapid stream of thought, from the crests of its highest waves.—Zschokke.

Language is the sheath in which is kept the sword of the mind; the casket in which we preserve our jewel; the vessel in which we secure our drink; the store-house where we lay up our food.—Luther.

Thinking is aided by language, and, to a great extent, is dependent upon it as its most efficient instrument and auxiliary.—N. Porter.

VII. Self-Education.

The primary principle of education is the determination of the pupil to self-activity—the doing nothing for him which he is able to do for himself.—Sir W. Hamilton.

The peculiar importance of the education of childhood lies in the consideration, that it prepares the way for the subsequent self-education of manhood.—J. Currie.

Self-activity is the indispensable condition of improvement; and education is only education—that is, accomplishes its purposes, only by affording objects and supplying materials to this spontaneous exertion. Strictly speaking, every man must educate himself.—Sir W. Hamilton.

The child learns more by his fourth year, than the philosopher at any subsequent period of his life; he learns to affix an intelligible sign to every outward object and inward emotion, by a gentle impulse imparted by his lips to the air.—E. Everett.

If all the means of education which are scattered over the world, and if all the philosophers and teachers of ancient and modern times, were to be collected together, and made to bring their combined efforts to bear upon an individual, all they could do would be to afford the opportunity of improvement.—Degérando.

VIII. Moral Education.

The best-trained head along with a corrupt heart, is like a temple built over a den of robbers.—Tegnér.

Head and heart constitute together the being of man, and he who is sound in one only is a cripple.—Stoy.

It holds as a rule in mental as well as in moral education, that the learner should be habituated to what is right before he is exercised in judging what is wrong.—J. Currie.

If you can get into children a love of credit, and an apprehension of shame and disgrace, you have put into them the true principle, which will constantly work, and incline them to the right.—Locke.

Man may be said originally to be inclined to all vices; for he has desires and instincts which influence him, although his reason impels him in an opposite direction.—Kant.

In my opinion, the first lesson which should quicken the understanding of the young, should be intended to form their morals and their perceptions; to teach them to know themselves, to live well and to die well.—Montaigne.

Direct teaching on moral ideas and principles is an important part of instruction.—Hegel.

Faith in God is the source of all wisdom and all blessings, and is nature's road to the pure education of man.—Pestalozzi.

He that will have his son have a respect for him and his orders, must have a great reverence for his son. "Maxima debetur pueris reverentia."—Locke.

A properly conducted school is a sort of moral gymnasium, preparatory to the great struggle on the arena of life.—A. R. Craig.

Morality is in infancy founded on the authority of the parent, acting with the support of habit and association; what he commands is law; the virtue of childhood is summed up in obedience.—Currie.

In man, the ideal is older than the actual. The loftly lies nearer the child than the debased. We measure time by the stars, and reckon by the clock of the sun, before we do by the city clock.—Richter.

Love awakens love; and a cold and heartless education usually produces a pupil of the same character.—J. A. Fischer.

Children should live in their paradise, as did our first parents, those truly first children.—Rousseau.

IX. Discipline and Government.

Correct thy son, and he shall give thee rest; yea, he shall give delight unto thy soul.—Solomon.

He that spareth his rod hateth his son; but he that loveth him chasteneth him betimes.—Solomon.

No father inflicts his severest punishment, until he has tried all other means.—Seneca.

A principal point in education is discipline, which is intended to break the self-will of children, in order to the rooting out of their natural low tendencies.—Hegel.

There is one, and but one fault, for which children should be beaten; and that is obstinacy or rebellion.—Locke.

Beating is the worst, and, therefore, the last means to be used in the correction of children.—Locke.

The shame of the whipping, and not the pain, should be the greatest part of the punishment.—Locke.

No frighted water-fowl, whose plumage the bullet of the sportsman has just grazed, dives quicker beneath the surface, than a child's spirit darts from your eye when you have filled it with the sentiment of fear.—H. Mann.

A school can be governed only by patient, enlightened, Christian love, the master principle of our natures. It softens the ferocity of the savage; it melts the felon in his cell. In the management of children it is the great source of influence; and the teacher of youth, though his mind be a store-house of knowledge, is ignorant of the first principle of his art, if he has not embraced this as an elemental maxim.—E. Everett.

Angry feelings in a teacher beget angry feelings in a pupil; and if they are repeated day after day, they will at last rise to obstinacy, to obduracy and incorrigibleness.—H. Mann.

The evil of corporal punishment is less than the evil of insubordination or disobedience.—H. Mann.

It is the teacher's duty to establish authority; peaceably, indeed, if he may,—forcibly if he must.—D. P. Page.

There are usually easier avenues to the heart, than that which is found through the integuments of the body.—D. P. Page.

Several collections of educational aphorisms may be found in Barnard's *American Journal of Education* (passim).—See also Wohlfarth, *Pedagogical Treasure-Casket* (*Pädagogisches Schatzkästlein*, Gotha, 1857), translated in Barnard's *Journal*; also the same, republished from Barnard's *Journal*, entitled *Educational Aphorisms and Suggestions, Ancient and Modern.*

APPARATUS, School.—The work of instruction in school is very greatly facilitated by sufficient and appropriate apparatus, such as blackboards, slates, globes, maps, charts, etc. This is especially required in the teaching of children in classes, as in common schools. By this means, the sense of sight being addressed, the impressions made are clearer and more durable. Besides, the concrete is made to take the place of the abstract, by the use of suitable apparatus; and, in the first stages of education, the former is almost exclusively to be employed, since abstract principles or truths are not comprehended by the young mind, except upon a sufficiently extensive basis of concrete facts. Thus, by means of the numeral frame, the various rudimental combinations of numbers are presented to the mind of the young pupil, in connection with actual objects; and in this manner a clear idea is given of those processes which, merely by abstract statements of the truths, would scarcely be apprehended at all. Of course, the teacher should be careful not to carry the use of such apparatus beyond its proper limits; since the pupil's mind is gradually to be accustomed to conceive clearly the truth of abstract propositions without regard to their concrete applications.

Every stage or grade of school instruction must have its appropriate apparatus. Infant instruction requires a great number and variety of simple apparatus (*gifts*) in order, by natural methods, to aid the development of the child's mind. (See Kindergarten.) The primary school should be supplied with a numeral frame, blackboards, slates, and pencils for the use of the children, a box of forms, spelling and reading charts, color charts, pictures of animals, etc.: and, when elementary geography is taught, simple maps and a small globe. For this purpose, one that may be divided into hemispheres (Hand Hemisphere Globe) is best: since by means of it the relation of the planisphere maps to the globe may be clearly shown. (See Globes.) A simple relief globe is also of great service at this stage. Other ingenious and attractive apparatus has been devised to aid the work of the primary school teacher, to which a special reference is not needed. In the more advanced stages of instruction, the use of any other than the ordinary apparatus, such as the blackboard, maps, globes, etc., becomes less and less necessary, except in the teaching of certain special subjects; as higher arithmetic, mensuration, astronomy, and other departments of natural science. For such purposes, the cube-root blocks and other geometrical solids, a tellurian, an orrery, etc., will be of great value. Charts of physiology, history, etc., are scarcely to be dispensed with. In the teaching of natural science, very expensive and complicated apparatus is not at first required Indeed, the simpler it is, the better; since the use of such appliances will incite the pupil himself to experiment with those simple contrivances which his own powers of invention will enable him to devise. Thus the use of the lever may be just as well explained by means of a pen-holder or a pointer as by a polished steel rod specially constructed for the purpose. Nothing marks more fully the ability of the teacher than adroitness in availing himself of all common resources for the purpose of illustration. Some of the most important discoveries in physical science have been made with very rude apparatus. In the use of apparatus to illustrate scientific facts, as of the globe, tellurian, or orrery for the purpose of teaching astronomy, it should always be borne in mind that such contrivances cannot supersede the study of nature itself. Cumbrous and complicated machinery, without an attentive observation of the natural phenomena which they are intended to explain, rather serve to give false notions than to impart correct ideas of the actual facts. The latter must be clearly grasped by the mind as facts before their illustration is attempted by means of artificial contrivances. This depends upon an important principle which the teacher should be careful to recognize and apply. (See Blackboard, and Numeral Frame.)

APPORTIONMENT. See School Fund.

ARABIAN SCHOOLS. The peninsula of Arabia, situated between the Red Sea and the Persian Gulf, has an area of 1,218,798 square miles, and a population estimated at 5,000,000. Of late, the Arabs have been of but little account in the annals of education as well as in political history. In former centuries, on the other hand, they occupied, for a considerable time, a prominent position. Arabia was the birthplace of Islamism, which, in its doctrinal and ethical peculiarities, bears the most evident marks of the people among whom, and the country in which, it originated. With the rapid spread of this religion, the Arabs became a powerful people, extending their political rule far beyond their original borders. Large empires were founded in Asia, Africa, and Europe; and science and the arts kept pace in their development with the increase of political power. The Arabian schools of the caliphate, and, later, those founded by the Moors, in Spain, not only attained a world-wide reputation, but, for a time, were generally recognized as eclipsing all other literary institutions. The prosperity of these schools began during the rule of the dynasty of the Ommiyades. These monarchs transferred their residence to Damascus, the capital of Syria, which at that time was a chief seat of Greek literature, appointed many Greeks and Syrians as surveyors, architects, and physicians; and brought the Arabian mind into contact with the civilization of the Greeks and the Syrians. The dynasty of the Abbassides, which succeeded that of the Ommiyades in 750, were still more instrumental in the promotion of science and literature among the Arabs. A large number of Greek authors were translated into Arabic; and in medical literature the Arabs became so proficient, that through the middle ages they were regarded as the highest authorities. Soon the Arabian schools were also regarded as superior to all others in mathematics and astronomy. A translation of Aristotle had a far reaching influence upon the further development of the Arabian mind. The teachings of Aristotle not only became the basis of Arabic philosophy, but through the influence of the Arabian schools, the study of this great Greek philosopher became popular among the Jews in Spain and, subsequently, generally among the Jews and Christians of Europe. The highest prosperity was attained by the Arabian Schools in Spain. In the high schools of Cordova, Toledo, Salamanca, and Seville, nearly all branches of human knowledge, Mohammedan theology and law, mathematics, astronomy, history and geography, grammar and rhetoric, medicine and philosophy, were taught. In these schools, Jewish, Mohammedan, and Christian teachers worked harmoniously together. The students lived in colleges, and, from time to time, had to pass examinations. The teachers sometimes employed substitutes. In the lower schools, which were mostly connected with mosques, the pupils often received their clothing and board gratuitously. The fame of the Arabian schools in Spain attracted students from all parts of Christian Europe, who were anxious to acquaint themselves with the Greek and Arabic literature and the Aristotelian philosophy. Among the many celebrated men who studied there, was the learned Gerbert, who became pope under the name of Sylvester II. Among the results which these students brought with them from the Arabian schools, were the Arabic numbers, now in general use in the civilized world. At the close of the 10th century, the Arabian schools in Spain began to decline, and the downfall of the caliphate of Bagdad, in 1258, extinguished the fame of their Asiatic schools.

In Arabia, at present, there is little education deserving the name. Among the Bedouins, there are no schools, and those that exist in the towns and villages are only of a very elementary character, generally connected with the mosques, and giving instruction in reading, particularly of the Koran, writing, and the rudiments of arithmetic. In the schools connected with the mosques, which are public schools, the poorer children are taught gratuitously; but besides these schools, there are private seminaries for the instruction of children of the higher and middle classes. A private teacher for children and young slaves is no uncommon part of the domestic establishments of distinguished families. There is no public provision for the education of women. In some of the larger towns and cities, there are colleges and professional schools, in which mathematics, astronomy, medicine, etc., are taught. One of the chief studies is that of the Arabic, to enable the scholars to read the Koran and the commentaries upon it, of which there are several; since these are written in a dialect differing in some respects from that now in general use.—See Schmidt, *Geschichte der Pädagogik*, vol. II.

ARCHÆOLOGY (from ἀρχαῖος, *ancient*, and λόγος, *knowledge*, *science*) denotes properly the science of antiquities. In the widest sense of the word, it would embrace the history, mythology, political institutions, religion, commerce, industry, literature, and fine arts of ancient times, but it is now more generally used in a restricted sense. Some writers, especially in America, apply it to the researches into the primeval period of man, and, in particular, into the history, customs, and remains of the primitive inhabitants of a country. Thus the Indians in the United States and the Celts in Great Britain, have become the subjects of profound archæological research.—In Germany the term is now more frequently used to denote the science of the monuments which are left to us from ancient times, and especially from Greek, Etruscan, and Latin antiquity. As the ancient monuments contain a vast amount of information, not to be derived from classical literature, archæology is regarded as an important auxiliary to the science of classical philology. The founder of archæology as a special science was Winckelmann; and the most famous work on that subject is the *Handbuch der Archæologie* by K. O. Mueller (3d edit., by Welcker, Breslau, 1846). An English work on the subject is Westropp's *Handbook of Archæology* (Lond., 1869). Biblical archæology and ecclesiastical or Christian archæology, are branches of theology. The former treats of the ancient geography, physical condition, and ethnography, and the general antiquities of Palestine and the adjacent countries; the latter, of the antiquities of the Christian Church, and chiefly of the early history of Christian worship. Works on biblical archæology have been written by De Wette, Scholz, Jahn, Rosenmueller, Keil, and others; on Christian archæology, by Bingham, Pellicia, Augusti, Binterim, Rheinwald, Otte, Henry (Philadelphia, 1837), Riddle (2d edit., Lond., 1843), Coleman, (*Ancient Christianity exemplified*, Philadelphia, 1853). At many of the European universities and theological schools, special courses of lectures on classical, biblical, or Christian archæology are provided for.

ARCHITECTURE. See Fine Arts.

ARCHITECTURE, School. See School House.

ARGENTINE REPUBLIC, an independent state of South America, area 841,000 sq. m., or, if we add the territory which is claimed by both the Argentine Republic and Chili, 1,000,000 sq. m.; population, according to the census of 1869, 1,879,410. The republic is growing rapidly, the increase of population from 1836 to 1869 amounting to 146 per cent. Since 1863, immigration has begun to assume large proportions. While, from 1863 to 1866, it averaged annually little more than 10,000, it reached, in 1870 and the following years, 40,000. The foreign element is especially large in the city and province of Buenos Ayres, and a considerable number of prominent positions in the literary institutions of the country are occupied by foreigners. Almost the whole native population belongs to the Roman Catholic Church; but the immigrants from the United States, Great Britain, Germany, and Switzerland have established a number of Protestant congregations and schools. To these a few native congregations have been added by the Methodist missionaries from the United States. There is a marked difference between the population of the towns, and that of the country. The former are generally civilized, and take a profound interest in education; but the *gauchos*, or the horsemen of the plain, think but little of education and civilization.

The territory of the Argentine Republic, after being occupied by the Spaniards, formed a part of the Viceroyalty of Peru till 1776, when the Viceroyalty of La Plata was erected. The war of independence against Spain began in 1810, and was successfully ended in 1812. In 1813, a Sovereign Assembly was convoked; and in 1817, the independence of the United Provinces of La Plata was formally declared. Like the other republics of Spanish America, the country suffered much from civil wars. From 1852 to 1860, Buenos Ayres was separated from the confederation of the other provinces, and formed an independent commonwealth. More recently, the progress of the country has been greater and more rapid than that of most of the other South American republics.

As early as 1605, the Jesuits established the university of Cordova, which soon became the literary center of all the territory lying in the basin of the La Plata river. Of course, instruction during the 17th and 18th centuries was entirely in the hands of the clergy, especially the Jesuits; and very little was done in the way of primary instruction. After the expulsion of the Jesuits, in 1767, the university passed into the hands of the Franciscans and greatly declined. Though, after the establishment of national independence, there were not wanting those who fully appreciated the importance of education, and sought to devise plans for its future development, the progress at first was very slow. The active progress of education dates from the adoption of the constitution of Sept. 1860, which still rules the country. Among the first provisions, is one for securing primary education in every province of the republic, making this an essential obligation. To the general government was given the power to dictate plans of general and university education; and a special ministerial department of public instruction was created. Such, however, was the indifference of the people, that the government, in order to carry out its plans of secondary education, was compelled not only to offer instruction, books, and all other necessaries free, but also to pay the pupils for the trouble of attending school and studying their lessons. The National College of Buenos Ayres was founded shortly after the adoption of the present constitution. Scholarships, under the name of *becas*, were established, giving to the student a monthly allowance of from ten to fifteen dollars in gold. About the same time, three other provincial institutions, the College of the Uruguay in the province of Entre Rios, and the College and the University of Cordova, were nationalized and placed upon a similar basis. Up to 1868, there were established five other similar institutions in the provinces of Tucuman, Salta, Catamarca, San Juan, and Mendoza; and, in 1868, five others were added in San Luis, La Rioja, Jujuy, Santiago, and Corrientes. In 1872, there were thirteen colleges, with 3697 students and 162 professors. The colleges are visited by an inspector of national colleges, who is himself a government employé.

In 1865, the national government took its first step in favor of primary instruction, distributing $22,000 in gold among the various provinces, for the purpose of promoting a popular movement in this direction. In 1866 and 1867, the same amount was voted by the national congress for this purpose. In August 1868, began the administration of President Sarmiento, who has done more for the promotion of education than any other statesman of South America. The progress made since then is wonderful. The new minister of public instruction, Dr. Nicolas Avellaneda, in his first report to the congress (1869), earnestly advocated sweeping reforms; and the work of carrying out these reforms was begun energetically. For the year 1869, $115,000 was voted for the purpose of encouraging primary instruction; for 1870, $95,000, and for 1871 $215,000. In 1871, a law was also passed, creating a special and independent fund for the purposes of primary instruction, distributing the proceeds among the various provinces in proportion to the efforts which they themselves might make. This law took effect in January 1873. In 1872, primary instruction was given in 1088 public and 566 private schools. The children of school age (6 to 15) numbered 468,987, while the number of those attending schools was 97,549. The number of teachers was, male 1558, female 1408. The expenditure for primary instruction in the same year was $1,564,350. In August 1871, the first national normal school was established at Paraná. It had, in 1872, 285 students and 6 professors. The first principal of the school was Dr. Geo. A. Stearns. — The only national university, at Cordova, was re-organized, in 1870, by President Sarmiento, who established a number of new chairs, and called from Germany professors of chemistry, physics, and botany, and from the United States a distinguished professor of astronomy. In 1872, the university numbered 14 professors and 103 students. The university of Buenos Ayres is a provincial institution. It was organized in 1822 by Rivadavia, and was, at first, only a law school; but, owing to the zeal of its rector, Dr. Juan Maria Gutierrez, chairs of mathematics, experimental physics, and chemistry were soon afterwards added. Its course of instruction resembles that of French institutions; the museum has been for many years under the direction of the distinguished German naturalist, Dr. Burmeister. —See *Report of the Commissioner of Education for* 1872 and 1873; Le Roy, in Schmid's *Encyclop.*, art. *Südamerica;* Burmeister, in Petermann, *Die südamerikanischen Republiken Argentina, Chile, Paraguay und Uruguay in* 1875 (Gotha, 1875).

ARISTOTLE, one of the most illustrious teachers and philosophers of either ancient or modern times, was born in 384 B.C. at Stagira, a Greek colony of Macedonia, near the mouth of the Strymon. From his birthplace he is often called "the Stagirite." His father, Nicomachus, was a distinguished physician and friend of the Macedonian king Amyntas II.; and from him Aristotle received the first instruction. Having lost his parents, he went at the age of seventeen to Athens, where he was for twenty years a pupil of Plato. His great teacher used to call him, on account of his restless study and his thirst for knowledge, the philosopher of truth and the intellect of his school. Subsequently, however, an estrangement arose between them, owing chiefly to the radical differences in their philosophical and educational systems. While Plato was a thorough idealist, Aristotle was just as fully a realist and the father of experimental science. About 343 B. C., Aristotle was appointed by king Philip of Macedon teacher of his son Alexander, at that time thirteen years old. The history of Alexander, who intellectually was no less prominent among the kings of the ancient world than as a conqueror, testifies to the success of Aristotle as a practical teacher. For a long time, Alexander was anxious to show his gratitude to his preceptor; and after the conquest of Persia, he presented him with eight hundred talents, or nearly a million of dollars. Later, however, the friendly relations between Alexander and Aristotle greatly suffered from the vicious habits of the former. After completing the education of Alexander, Aristotle returned to Athens (in 335, or according to others in 331, B. C.) and taught philosophy in the Lyceum, a gymnasium near the city. In the morning, he instructed the advanced scholars in lectures acroamatic or esoteric; in the evening, he gave popular or exoteric lectures to larger circles of hearers. From the shady walks (περίπατοι) around the Lyceum, in which he walked up and down while delivering his lectures, his school was called the *peripatetic*. After having taught in this way for thirteen years, and composed most of his immortal works on philosophy and natural science, he was accused by Demophilus, a prominent citizen of Athens, of impiety, because in a poem he had attributed divine honors to his friend Hermias. He, therefore, fled to Chalcis in Eubœa, where he died, in 322, B. C., of a chronic disease of the stomach.

Aristotle's method of teaching was essentially analytic. Proceeding from the concrete, he tried to derive general ideas from a number of observed facts and phenomena; and his entire philosophy is based on the principle that all our knowledge must be founded on the observation of facts. Pedagogy, according to Aristotle, must be founded on principles derived from the knowledge of man. The highest goal of all human activity is εὐδαιμονία, *happiness*, both for the individual and for the state. This εὐδαιμονία is based on virtue, which is acquired by the performance of moral actions. As man is a social being, destined to live in society, the development of virtue in general is dependent upon political life. The object of the state is to establish the complete happiness of families and communities, and the preservation of the state depends on an educational system conformable to the laws and constitution. The same education will not produce the same virtues in different persons; for the formation of character in each person is dependent on three different things,—nature, habit, and instruction. It must be the aim of habit and instruction to develop the peculiar faculties which nature has implanted in each individual. In the education of a child, as it is of the greatest importance that its body be, from its birth, as perfect as possible, care should be taken that the parents be suitably matched, and that women during their pregnancy receive substantial food, and be preserved as much as possible from mental agitation. Children who at their birth are crippled should not be brought up at all. Until the fifth year of age, children should not be occupied in hard labor; on the other hand, however, they should not remain inactive, but have suitable exercises in plays adapted to their age. During this time, as well as during the two following years, education by means of habit takes place, as children observe what they subsequently have themselves to perform. Education by means of instruction begins in the 7th year of age and lasts to the 21st. This time is divided into two periods, the one extending from the 7th year to the age of puberty (about the 14th year), the other from the 14th to the 21st. Education by habit during this period continues, but the chief work is done by instruction. As a general principle, it must be observed, that a state can only exist if children are educated in accordance with the existing constitution; in democratic commonwealths, in which all in turn may rule or be ruled, it is, therefore, of importance that boys should be taught obedience, for only those who have learned how to obey will be able to rule. In regard to the subjects in which instruction should be given, three classes should be distinguished, (1) that which is necessary and useful for life, (2) that which leads to ethical virtue, and (3) that which, going beyond these, serves the highest theoretical aims. In things pertaining to the ordinary occupations of life, the young are to be instructed only so far as such occupations are becoming to a free man. Every mechanical work, every kind of servile or menial labor, and especially every thing that might injure the body, is to be avoided. The fine arts should be practiced with a view to general culture; but no special excellence should be aimed at. In regard to ethical virtues, children must especially be taught to be considerate and temperate, in order that the exertions necessary to attain self-control may lose their original unpleasantness by means of habit. Finally, there are for ethical as well as theoretical education, certain instructional means, namely reading and writing, gymnastics, music, including rhythmics and poetry, and occasionally also drawing. The first and the last of these serve also for the necessities of life; and care should, therefore, be taken that the supreme aim of a noble education be not infringed upon. The instruction in drawing, therefore, should be given in such a way as to enable the youthful mind to understand and criticise the works of plastic art. Gymnastics educate the youth in manliness, and give to the body health and beauty. That which is properly athletic, and especially every thing that leads to rudeness and ferocity, should be avoided, a point of view which the Spartans, in their otherwise excellent educational system, somewhat lost sight of. Before the age of puberty, only easy exercises should be practiced, and all violent exertions that might impede natural growth, should be avoided. After attaining the age of puberty, boys may devote three years to other branches of instruction; then more difficult exertions and privations may be practiced; and during this time mental occupations should receive less attention; for the activity of the mind is impeded by the exertions of the body, and the activity of the body by the exertions of the mind. Musical education deserves special attention on account of its ethical influence. Music more than any other art, is the art of imitation, and reflects in the soul of the hearer, in a manner both attractive and instructive, the various affections and emotions of the mind. The Doric melody is specially recommended, as keeping the right mean between passionate excitement and womanish weakness. The last class of subjects to be taught in the instruction of youth, are those which serve for theoretical purposes, or for the acquisition of the so-called dianoetical virtues, which are only to be found in the more intelligent class of men. These subjects are the pure sciences, as mathematics, dialectics, and philosophy. The highest of all practical sciences, political economy, is not a fit subject for the young, as they are too inexperienced in the actions of life on which political science is based.—Like the educational theories of Plato and other Greeks, the theories of Aristotle almost exclusively refer to free-born youth. But little attention is paid to the education of the female sex and the working classes; and still less is given to the education of slaves. Aristotle recommended, however, that the moral and intellectual improvement of the slaves should be cared for.

Among the works of Aristotle still extant, the *Nicomachean Ethics* and the *Politics* contain his views on education. On the educational system of Aristotle, see SCHMIDT, *Geschichte der Pädagogik*, vol. I; and ONCKEN, *Die Staatslehre des Aristoteles*, 2 vols., 1870 — 1875. — See also *Aristotelis Ethica Nicomachea*, edited by J. E. T. ROGERS, (Lond., 1874); and the same, translated by R. WILLIAMS, (Lond., 1874); *The Politics* (Greek text, with English notes), by RICHARD CONGREVE, (Lond., 1874); *The Ethics, with Essays and Notes*, by SIR A. GRANT, (Lond., 1874); GROTE, *Aristotle* (Lond., 1872).

ARITHMETIC (Gr. *ἀριθμητική* from *ἀριθμός*, number), the science of numbers. This subject occupies a prominent place in the curriculum of all elementary schools, both primary and grammar, as well from its educational or disciplinary, as its practical value. On a fair estimate, not less than one-fourth of the pupil's time, for the first eight or ten years of his school life, is given to the study of this subject; but the results are too often quite inadequate to this large expenditure of time, the most that can generally be claimed being a tolerable familiarity with the processes of the fundamental rules, common fractions, and denominate numbers, with a very imperfect knowledge even of the processes of decimal fractions, proportion, evolution, and the business rules of arithmetic. Any such knowledge of the subject as enables the student to give a clear exposition of the reasons for the various processes, or as is required to render him trustworthy in ordinary business computations, is far from being the usual attainment. This arises, in part at least, from a fundamental error in the general treatment of this branch of instruction,—the dissociation, to a great extent, of mental from written arithmetic; whereas they should be so combined as to constitute only different exercises of the same subject. Quite within the memory of some of our living educators, the text-books of arithmetic generally in use were simply single books of definitions, rules, and examples. Such were Ostrander's, Pike's, Dabol's, etc. These were succeeded by two classes of text-books,—one, called *Mental Arithmetics*, of which Colburn's is a type; and the other, such as presented an attempt to explain the reasons of the processes involved in the different rules. Of the latter, Adams's *New Arithmetic* affords a fair example. Following these two lines, the science has been practically divided into two; and so diverse are these in their methods, that a pupil may be quite expert in one, and almost entirely ignorant of the other. If, in addition to this, the fact is considered that the text-books in the course have been multiplied until there are now two books in mental arithmetic, and three in written, in several of the series in general use, the reason for the length of time consumed on this subject in our public schools will be obvious. But there is still another cause which operates with considerable force; that is, the cumbering of our text-books with so many subjects that are utterly useless to the student. No branch of business requires a knowledge of *greatest common divisor, least common multiple, circulating decimals*, or *duodecimals*. It is indeed important that a pupil should know how to reduce a fraction to its lowest terms; but no ordinary case requires a knowledge of the process for finding the *g. c. d.*, nor are we accustomed to use it. For the process itself we have no use until we reach higher algebra, and the demonstration of the process is quite too intricate for the ordinary pupil in elementary arithmetic. Again, no one uses the processes of *alligation alternate;* and but few indeed of the great mass of our school children can comprehend the conditions which give rise to much of our business arithmetic. It is not intimated that such problems as those which arise in *stocks, arbitration of exchange, general average*, etc., should not have a place in an arithmetical course, but only that they do not belong in the course for the masses. There are other topics, more elementary and more generally useful, to which the time of these should be given. And lastly, on this topic, of what conceivable use are many of the examples which occupy so much space in our books, and so much time in the course? Take the following as specimens:

I bought a hat, coat, and vest, for $34; the hat cost $\frac{2}{5}$ of the price of the coat, and the vest $\frac{3}{4}$ of the price of the hat: what was the cost of each?

One-half of A's money = $\frac{2}{3}$ of B's; and the interest of $\frac{3}{4}$ of A's and $\frac{1}{3}$ of B's money, at 4 per cent for 2 yr. 3 mon. is $18: how much has each?

A and B have the same income; A saves $\frac{1}{5}$ of his; but B, by spending $30 per annum more than A, at the end of 8 years finds himself $40 in debt; what is their income, and what does each spend per annum?

But it is said by some that these things are necessary as mental gymnastics. However applicable the principle involved in this may be, in education there is really no need of it. If the demands of actual life are so meager, that we must make a large part of our discipline in arithmetic consist in unraveling such manufactured puzzles, is it not well to ask the question whether there are not other branches of science which will afford the needed discipline by dealing with the actual and useful, instead of wasting time and strength on the purely fictitious? The arithmetics of to-day, however, are a great advance, in this respect, on those in use fifty years ago; but no editor of a text-book on arithmetic has yet felt at liberty to cut out entirely these superfluous problems. Undoubtedly, the demands of science and of business life furnish abundant resources in this direction; but these more abstruse problems do not fall within the purview of an elementary course, nor come within the demands which actual life makes upon the great majority of persons. There are a great number and variety of intricate questions which do actually arise in discounting negotiable paper, as well as in the abstruse questions which insurance and annuities present; but it is not the aim of our elementary courses to train pupils for such specialties; and when in any properly co-ordinated course of study such topics are reached, their solution will then come in the regular line of the application of general principles, and the student will have acquired sufficient maturity to comprehend the business, economical, or political relations which give rise to them.

What should constitute the course in arithmetic.—In the first place, there should be a thorough unification of the processes of mental and written arithmetic. There is but one science of arithmetic; and every thing that tends to produce the impression in the pupil's mind that there are two species, the one intellectual and the other mechanical, is an obstacle to his true progress. What is valuable in the methods now peculiar to mental arithmetic, needs to be thoroughly incorporated with what is practically convenient or necessary in written arithmetic; so that the whole may be made perfectly homogeneous. The basis upon which this is to be effected is, that principles should be discussed first by the use of small numbers which can be easily held in the mind, and which do not render the difficulty or labor of combination so great as to absorb the attention, or divert it from the line of thought; and that we should pass gradually, in applying the reasoning, to larger numbers and more difficult and complex combinations, in which pencil and paper are necessary. The rationale should be always the same in the mental (properly, oral) arithmetic and in the written, pencil and paper being used only when the numbers become too large, or the elements too numerous, to render it practicable to hold the whole in the mind. For example, suppose the pupil to be entering upon the subject of *percentage*. The first step is to teach what is meant by *per cent.* In order to this, small numbers will be used, and the process will not require pencil and paper, nor will such numbers be selected at first, as will cause difficulty in effecting the combinations. Thus, the first questions may be, "Mr. A had 300 sheep and lost 5 out of each hundred; how many did he lose?" "What phrase may we use instead of '5 out of each hundred?'" "Mr. B had an orchard of 400 peach-trees and lost 6 per cent of them; how many did he lose?" "What phrase may we use instead of '6 per cent?'" To assign as the first example, one like the following would be a gross violation of this principle: "Mr. A put out $759, on 7 per cent interest; what was the interest for a year?" After the principle to be taught is clearly seen, larger numbers should be introduced, and such as require that the work be written. But the same style of explanation should be preserved; and great care should be taken to have it seen that the method of reasoning is the same in all cases. To illustrate still farther; as, in practice, the computer ordinarily uses the rate as the multiplier, the form of explanation, when the whole is given orally, should be adapted to this fact. At first, such an example as the first above will naturally be solved thus: "If Mr. A lost 5 sheep out of 100, out of 3 hundred he lost 3 times 5, or 15 sheep." But before leaving such simple illustrations, the reasoning should take this form: "Since losing 1 out of 100 is losing .01 of the number, losing 5 out of 100 is losing .05 of the number. Hence, Mr. A lost .05 of 300 sheep, which is 15 sheep." Thus, in all cases, the form of thought which will ordinarily be required in solving the problem, should be that taught in the introductory analysis. A farther illustration of this is furnished by *reduction*. At first, the question, "How many ounces in 5 lb.?" will naturally be answered, "Since there are 16 oz. in 1 lb., in 5 lb. there are 5 times 16 oz., or 80 oz." But in practice the 16 is ordinarily used as the multiplier, and it is better that the introductory (mental) analysis should conform to this fact. Hence, the pupil should be led to see, at the outset, that, as every pound is composed of 16 ounces, in any given weight there are 16 times as many ounces as pounds; and he should be required to analyze accordingly. Apart from this use of what are called mental processes, there is no proper well-defined sphere for their employment. In practical applications, it is quite unphilosophical to classify the examples, by calling some *mental* and others *written*. We do not find them so labeled in actual business life. The pupil needs to discriminate for himself as to whether any particular example should be solved without the pencil or with it. It should also be borne in mind that business men rely very little upon these mental operations. They use the pen and paper for almost every computation. In the second place, in constructing our course in arithmetic, we need to give the most careful attention to the condition and wants of the youth found in our public schools. Perhaps it is no exaggeration to say, that from eighty to ninety per cent of the pupils disappear from these schools by the close of the seventh school year; and not more than one in one hundred takes a high school course. Since all pupils of the common schools have need of the rudiments of number, as counting, reading and writing small numbers, the simple combinations embraced in the *addition, subtraction, multiplication*, and *division tables*, the simpler forms of *fractions*, and the more common denominations of *compound numbers*, an elementary text-book is deemed to be needful for many schools. The objections often urged to having these primary lessons entirely oral are, that it makes an unnecessary draft upon the time and energy of the teacher, renders the pupils' progress very slow, does not so readily supply the means of giving them work to do in their seats, and more than all, begets in their minds a dislike for study and self-exertion, and a disposition to expect that the teacher must do all the work, and thus carry them along. But whatever disposition may be made of *primary arithmetic*, as usually understood, there is an imperative demand that the course in arithmetic for the masses should be so arranged that the more important practical subjects can be reached and mastered by a majority of our youth during the comparatively short time which they can spend in our schools. In order to effect this, three things will be found necessary: (1) a rigorous exclusion of all topics relatively unimportant, (2) a judicious limitation of the topics presented, and (3) care that, in the laudable desire to secure facility in fundamental processes, —adding, multiplying, etc., the teacher does not consume so much time that the great mass of the pupils will never advance beyond the merest rudiments of the subject. The range of topics to be included in the common school course, will be the *fundamental rules; common* and *decimal fractions; denominate numbers* (care being taken to reject all obsolete or unusual denominations, and to give abundant exercises calculated to insure a definite conception of the meaning of the denominations); *percentage*, including *simple, annual*, and *compound interest*, with *partial payments, common* and *bank discount*, and some of the more common uses of *percentage*. If, after this, the course may be extended, the next subjects in importance are *ratio, proportion*, and the *square* and *cube roots*. Much more than this cannot be embraced in a course which the masses of our youth are able to master; and in treating these, constant care will be necessary to introduce problems which occur in actual life, and as far as possible to exclude all others. Something of common *mensuration* should be introduced in connection with the *tables* of measures of *extension;* and the more common problems in *commision, insurance, taxes, stocks*, etc., will be readily introduced in *percentage* without occupying either much space or time.

For the few who can take a more extended course, a thoroughly scientific treatment of the subject of arithmetic is desirable; and this quite as much for its disciplinary effect, in giving breadth and scope to the conceptions, and inducing a disposition to systematize and generalize, and thus to view truth in its relations, as for the amount of mere arithmetical knowledge which may be added to the pupil's stock. Here we may introduce an analytical outline of the subject, presenting the topics in their philosophical relations, rather than in their mere practical and economic order and connection. Thus, in treating *notation*, the various forms of notation can be introduced, as of simple and compound numbers, other scales than the decimal, various forms of fractional notation, the elements of the literal notation, etc. Then, as *reduction* is but changing the form of notation, this topic will come next, and will embrace all the forms of reduction found in common arithmetic, as from one scale to another, of denominate numbers, of fractions common and decimal, etc., showing how all arithmetical reductions are based on the one simple principle: *If the unit in reference to which the number is to be expressed is made smaller, the number must be multiplied, and if the unit of expression is made larger, the number must be divided.* Passing to the combinations of number, under *addition* all processes thus designated in arithmetic will be treated, and the general principles out of which they all grow will be developed. In this method of treatment, the pupil will not find himself merely going over the elementary subjects through which he plodded in the days of his childhood, but new ranges of thought will be presented, at the same time that all the principles and processes of the elementary arithmetic are reviewed; the very first sections, even those on *notation, reduction*, and the *fundamental rules*, bringing into requisition most of his knowledge of arithmetic, and giving vigorous exercise to his mind in grasping new truth. But in addition to all this, which pertains to the method of presentation, there will be much of practical arithmetical knowledge to be gained. In the business rules, *discount* needs a much fuller treatment than it has usually received in any of our text-books. Many problems, of frequent occurrence in modern business circles, are not provided for in these books; and, in fact, some of the most common have had no solution at all which has been made public. The wonderful development of the *insurance* business demands that its principles and methods receive a much fuller treatment than they can have in an elementary course: this is especially true of *life insurance. Foreign exchange, customs, equation of payments*, etc., are other topics suitable for this advanced course, which are quite impracticable in an elementary course within the reach of the masses. Two other ends will be subserved by this method: (1) It will be a leading purpose *to teach the pupil how to investigate*, and to this end he should be put in possession of the great instrument for mathematical investigation, namely, the *equation*. Of course, only the simpler forms of the equation can be introduced; nevertheless, enough can be given to enlarge very greatly the student's power to examine new questions for himself. By means of the equation, he may be taught the solution of such problems as the following, which would be quite out of his reach without this instrument:

To find what each payment must be in order to discharge a given principal and interest in a given number of equal payments at equal intervals of time.

To find the present worth of a note which has been running a certain time, and is due at a future time, with annual payments on the principal, and annual interest; so that the purchaser shall receive a different rate of annual interest from that named in the note.

These and many other important business problems are quite within the reach of the simple equation, and are scarcely legitimate questions to propose to a student who has not some knowledge of this instrument. (2) The second general purpose which we shall mention as being subserved by this course is, that by grouping all the arithmetical processes under the fewest possible heads and showing their philosophic dependence, the whole is put in the best possible form to be retained in the memory. Thus, if it is seen that a single principle covers all the cases in reduction, that another simple principle covers all the so-called "*problems in interest*," that all the common intricate questions in *discount* are readily solved by the simple equation, etc., these processes will not be the evanescent things which they have often been.

Principles and maxims to be kept in view while teaching arithmetic. — I. There are two distinct and strongly marked general aims in arithmetical study: (1) To master the rationale of the processes, and (2) To acquire facility and accuracy in the performance of these operations. The means which secure one of these ends are not necessarily adapted to secure the other. Thus, to secure the first, for example, in reference to addition, the steps are, learning to count, learning how numbers are grouped in the decimal system, learning how to make the addition table, and, finally, by means of a knowledge of the sum of the digits taken two and two, learning to find the sum of any given numbers. In regard to the latter process, the pupil needs to know why we write units of a like order in the same column, why we begin at the units' column to add, why we "carry one for every ten," as the phrase is, etc. But all this may be known, and yet the pupil make sorry work in practical addition. In order to secure a knowledge of the rationale, each step needs to be clearly explained and fully illustrated, and then the pupil must be required to repeat the whole, "over and over again," in his own language. For this purpose, much class drill on the blackboard, in having each pupil separately explain in detail the reasons for each step of the work which he has before performed, will be necessary. Pupils may be required to bring into the class practical exercises solved on their slates, and then sufficient time be given to explanation from the slates. These three things repeated in about the same way, (1) a clear preliminary explanation of principles either given in the text-book or by the teacher, (2) a thorough mastery of these principles by the pupil so that he can state them in a general way, and (3) a careful and continued repetition of them in the class, in application to particular examples, will secure the first of these general ends of arithmetical study. To secure the second, namely, facility and accuracy in applying these principles, so as to be able to add with ease, rapidity, and accuracy, long continued drill, with the mind quite unencumbered by any thought of the reasons for the processes, will be indispensable. It will not be sufficient that pupils solve accurately numerous examples, in the slow plodding way to which they are accustomed in their private study, but large numbers of fresh problems should be furnished in the class, which the pupils should be required to solve with the utmost promptitude, and with perfect accuracy. In respect to all mere numerical combinations, as addition, subtraction, multiplication, division, involution, evolution, etc., oral drills like the following will be of the greatest use and should be continued until the combinations can be made as rapidly as we would naturally read the numbers: Teacher repeats while the pupils follow in silence, making the combinations, "5+3÷2[*] +3, squared, —7÷7× 3+7, square root, etc." These oral drills may be commenced at the very outset in regard to addition, and extended as the other rules are reached, and should not be dropped until the utmost facility is secured. A similar drill exercise can be secured by pointing to the digits as they stand on the board, or on charts, and simply speaking the words which indicate what combinations are required. Any figures which may chance to stand on the board may be used in this way to secure an indefinite amount of most valuable drill. This latter exercise,—making the combinations at sight — is of still greater practical value than the former, in which the ear alone is depended upon; for it is a singular fact that facility in one method does not insure it in the other, and the latter is the form in which the process is usually to be applied. Again, in the *business rules* the principles underlying the processes must be clearly perceived, and the pupil, by continued practice in explaining solutions written upon the board, must become able to give in good language the reason for each step. But when all this is secured, there will be found need of much drill on examples to the answers of which he cannot have access, and which he must take up and solve at the moment. In this department, much valuable exercise may be given by handing the pupils written notes or papers in due form, and requiring them to compute the interest, or discount, or make the required computation at sight. But the illustrations now given will suffice to show that there are, as above stated, two general purposes—the theoretical and the practical—which must run parallel through all good teaching in arithmetic, and that they are generally to be attained by different means.

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[*] The signs of division, multiplication, etc., are not used with strict propriety in this specimen exercise; they are applied to the result of all the preceding operations in each case as though all before them had been included in a parenthesis. Thus in this case it is 5 + 3, or 8 which is meant to be divided by 2, giving 4, to this 3 added, giving 7, this squared, giving 49, etc.

II. In order to realize the above, a careful discrimination needs to be made between simply telling *how* a thing is done, and telling *why* it is done. Very much of what we read in our text-books, and hear in class-rooms, under the name of *analysis*, in explanation of solutions, is nothing more than a statement of the process—a telling *how* the particular example is wrought. This vice is still so prevalent as to need the clearest exposition and the most radical treatment. Indeed, it has become so general as to be mistaken by the masses for the thing it purports to be; and pupil and teacher frequently seem to think that this parrot-like way of telling *what has been done* is really a logical exposition of the principles involved. The following example, clipped from a book not now a candidate for popular favor, will serve to illustrate our meaning:

```
".0017)36.3000(21352
       34
       ——
        23
        17
        ——
         60
         51
         ——
          90
          85
          ——
           50
           34
           ——
           16
```

Commencing the division, we find that 17 is contained in 36, 2 times. We place 2 in the quotient, and subtract 2 × 17 from 36. The remainder is 23. 17 is contained in 23, 1 time. Place 1 in the quotient, and subtract 1 × 17 from 23. To the remainder 6 we annex one of the 0s, and find that 17 is contained in 60, 3 times with 9 remainder. We continue this process, annexing to each remainder a new figure of the dividend, until we find a final remainder 16, which does not contain 17, but the division by 17 may be expressed by writing the divisor underneath."

Compare this with the following:

Reasons for the Rule in Short Division.—The divisor is written at the left of the dividend, simply that we may be able to see both at once conveniently.

We begin at the highest order to divide, because by so doing we can put what remains after each division into the next lower order and divide it; and thus we get all that there is of any order in the quotient as we go along.

We write the quotient figures under the orders from whose division they arise, because they are of the same orders.

The process ascertains how many times the divisor is contained in the dividend, by finding how many times it is contained in the parts of the dividend and adding the results.

This may be readily illustrated by an example. For this purpose let us divide 1547 by 4. The following is an analysis of the operation:

1547 equals 12 hundreds, 32 tens, 24 units, and 3 units;

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     4 is contained
     ⎧ 12 hds.    3 hds.,  or 300 times.
     ⎪  32 tens   8 tens,  or  80 times.
  in ⎨   24 units 6 units, or   6 times.
     ⎪    3 units, no times.
     ⎪ ———              ———
     ⎩ 1547             386 times,
with a remainder 3.
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III. There should, also, be a careful discrimination between *pure* and *applied* arithmetic, in order that they may be so taught as to secure the proper end of each. Pure arithmetic is concerned solely with abstract numbers, and the breadth of discipline to be secured by its study is not great; but the applications of arithmetic are almost infinitely varied, and give a far wider scope for mental training. In the latter, the questions are not *how* to multiply, add, subtract, etc., but *why* we multiply, add, or subtract. Thus, in solving a problem in interest, it would be quite out of place to cumber the explanation with an exposition of the process of multiplying by a decimal, but it is exactly to the purpose to give the reason for so doing. The most important object in applied arithmetic is to acquaint one's self so thoroughly with the conditions of the problem—if in business arithmetic, with the character of the business—as to discern what combinations are to be made with the numbers involved. Many of these applications are quite beyond the reach of the mind of a mere child. Thus, to attempt to explain to very young pupils the commercial relations which give rise to the problems of *foreign exchange*, or the circumstances out of which many of the problems in regard to the value of *stocks* grow, would be perfectly preposterous.

IV. In teaching applied arithmetic, it is of the first importance that the problems be such as occur in actual life, and that in expressing them, the usual phraseology be employed. For example, compare the following:

(1) What is the present worth of $500 due 3 yr. 7 mo. 20 da. hence, at 6 per cent per annum?

(2) I have a 7 per cent note for $500, dated Feb. 6th, 1873, and due July 10th, 1876. Mr. Smith proposes to buy it of me Sept. 18th, 1874, and to pay me such a sum for it as shall enable him to realize 10 per cent per annum on his investment. What must he pay me? In other words, what is the present worth of this note Sept. 18th, 1874?

The first supposes a transaction which could rarely, if ever, occur, and even disguises that. Most pupils who have gone through discount in the ordinary way, if asked, "What interest does the $500 bear, in the first example?" would answer, "6 per cent." Of course, it is understood that the money is not on interest. Moreover, we find no such paper—no notes not bearing interest—in the market. Again, the assumption seems to be that the note—if even a note is suggested at all—is discounted at the time it is made. Thus, it is obvious that the first form is calculated to give the pupil quite erroneous impressions; whereas the second brings a real transaction into full view.

V. From the beginning to the end of the course, it should be the aim to teach a few germinal principles and lead the pupil to apply them to as great a number of cases as his time and ability may permit. Thus, at the very outset, a good teacher will never tell the child how to count; but having taught him the names of the numbers up to *fourteen*, will show him the meaning of the word fourteen (four and ten); then he can be led to go on to nineteen by himself. No child ought to be *told* how to count from fifteen to nineteen; and after twenty, he needs only to be shown how the names of the decades, as twen-ty, thir-ty, for-ty, and fif-ty are formed, to be able to give the rest himself; nor does he need to be told how to count through more than one decade. In reference to the fundamental tables, it may be suggested that no pupil should be furnished with an addition, subtraction, multiplication, or division table ready-made. Having been taught the principle on which the table is constructed, he should be required to make it for himself. As preliminary to practical addition and subtraction, the combinations of digits two and two which constitute any number up to 18 (9+9) should be made perfectly familiar. Thus the child should recognize 1+4, and 2+3, as 5; 1+5, 2+4, and 3+3, as 6; etc.; and this should be made the foundation of addition and subtraction. He should be taught, that if he knows that 3+4 = 7, he knows by implication that 23+4 = 27, 33+4 = 37, etc. Passing from the *primary arithmetic*, he should be taught *common fractions* by means of the fewest principles and rules consistent with his ability. Thus in multiplication and division, *To multiply or to divide a fraction by a whole number*, and *To multiply or to divide a whole number by a fraction*, are all the cases needed; and these should be taught in strict conformity with practical principles. Thus, to multiply a whole number by a fraction is to take a *fractional part* of the number; and to divide a number by a fraction is to find how many times the latter is contained in the former. To cover all the forms of *reduction of denominate numbers*, nothing is needed but the principle or rule, that to pass from higher to lower denominations, we multiply by the number which it takes of the lower to make one of the higher; and to pass from lower to higher we divide by the same number. These simple principles should be seen to cover all cases, those involving fractions as well as others.

In like manner, by a proper form of statement of examples, and an occasional suggestion or question, most of the separate rules usually given under *percentage* may be dispensed with. In dealing with the cases usually denominated *problems in interest*, all that is needed is the following brief rule: *Find the effect produced by using a unit of the number required; under the given circumstances, and compare this with the given effect.* This should be made to cover the cases usually detailed under six or eight rules.

VI. There are *three stages* of mental development which should be carefully kept in view in all elementary teaching: (1) *The earliest stage*, in which the faculties chiefly exercised are observation, or perception, and memory, and in which the pupil is not competent to formulate thought, or to derive benefit from abstract, formal statements of principles, definitions, or processes; (2) *An intermediate stage*, in which the reasoning faculties (abstraction, judgment, etc.) are coming into prominence, and in which the pupil needs to be shown the truth, so that he may have a clear perception of it, before he is presented with a formal, abstract statement, the work, however, not being concluded until he can state the truth (definition, principle, proposition, or rule) intelligently, in good language, and in general (abstract) terms; (3) *An ultimate stage*, or that in which the mental powers are so matured and trained, that the pupil is competent to receive truth from the general, abstract, or formal statement of it. At this stage, definitions, principles, propositions, and statements of processes may be given first, and illustrated, demonstrated, or applied afterward. (See ANALYTIC METHOD, and DEVELOPING METHOD.)

ARIZONA was organized as a territory Feb. 24th, 1863, being formed from the territory of New Mexico. Its area is 113,916 square miles; and its population, excluding tribal Indians and military, in 1870, was 9,581.

Educational History.—An act was passed by the territorial legislature in October, 1863, authorizing the establishment of common schools; and the next year, another and more complete law was enacted. Nothing, however, of any importance was accomplished toward the establishment of a system of common schools in the territory until the appointment of A. P. K. Safford as governor in 1869. Through the most laborious efforts on his part, a public opinion in favor of common schools was awakened among the people; and in consequence thereof, a law was passed in 1871, which levied a tax for the support of schools, of ten cents on each one hundred dollars of the taxable property of the territory, and authorized the supervisors of counties and the trustees of the school-districts to levy additional taxes for the establishment and maintenance of free schools in their respective districts. By this law, the governor was made *ex officio* superintendent of public instruction, and the judges of probate, county superintendents. It was not until 1872 that, in pursuance of these provisions, schools were established. In July of that year, the governor stated that "a free school had been put in operation in every school-district where there was a sufficient number of children." The larger portion of the children, he further stated, "were of Mexican birth, and few could speak the English language; but they had been taught exclusively in English, and had made satisfactory progress." In 1873, the total school population between the ages of 6 and 21, was reported as 1,660, of whom 836 were males, and 824 females. Of these there were only 482 attending public and private schools, the former, 343. The whole amount paid for school purposes was $11,060. In February, 1873, the school law was amended, constituting the system as it now exists.

School System. — The governor of the territory is *ex officio* superintendent of public instruction, and apportions the school fund among the several counties, according to their respective school population, consisting of children between the ages of six and twenty-one years. It is made his duty to visit and inspect the schools as often as once in each year. The probate judges of the several counties are *ex officio* superintendents of public schools for the same. They are appointed by the governor, and hold their respective offices for two years. A tax of 35 cents on each $100 is levied in the several counties for the maintenance of schools, and a tax of 15 cents on $100 for the whole territory. The money is divided in proportion to the school attendance. Each district may levy additional taxes by a vote of two thirds of the district. Education is made compulsory; that is, parents or guardians can be compelled to send their children sixteen weeks during the year to some school, when within two miles of their residence, or have them instructed at home.

Educational Condition.—The schools of Arizona are all of a primary grade; and teachers receive from $100 to $125 a month, males and females receiving an equal salary. According to the report of Gen. Safford, of Dec. 21st, 1875, there were in the territory 2,508 children between the ages of six and twenty-one, of whom 598 attended public schools. The receipts for the preceding year were $28,759.92, and the disbursements were $24,151.96.

This report stated that, under the existing school law, the free school system had been made a success, and that ample means were afforded by which every child in the territory might obtain the rudiments of an education.

ARKANSAS. This state was originally a portion of the territory of Louisiana, purchased from the French government in 1803. It remained a part of that territory until 1812, when Louisiana being admitted as a state, it became a part of the Missouri territory, which was organized in that year; and so continued till 1819, when it was organized as a separate territory. It was admitted into the Union as a state in 1836.

Educational History.— The constitution of 1836 contained a declaration in favor of education to the effect that "as knowledge and learning, generally diffused through the community, are essential to the preservation of free government," it should be the duty of the general assembly to provide for the sale of lands donated to the state by the general government for educational purposes, and to apply the money received therefrom, to the establishment and support of schools. In accordance with this provision of the constitution, the legislature passed certain acts prescribing the manner of disposing of the school lands, which acts are, substantially, still in force. Two provisions of this law are worthy of special notice, on account of their disastrous consequences. The first was, that, upon the petition of a majority of a township, the county commissioner should sell the sixteenth section, in forty-acre tracts, to the highest bidder, one-fourth of the purchase money being payable in cash, and the balance, within eight years, in installments. The second was, that the county commissioner should loan the school moneys in his hands to parties who would give satisfactory notes to secure their payment with interest. The practical operation of the law was as follows: A, B, and C purchased a sixteenth section, say January 1st; A and B being security for C's notes for deferred payments, B and C for A's notes, and A and C for B's notes. Each party paid the school commissioner, say five hundred dollars, as his first payment, and took his receipt. The same day, they each borrowed five hundred dollars from the school fund of the county, thereby virtually borrowing from the school commissioner the money to make the first payment on the lands. The notes given were made payable in "lawful money of the United States"; but, after the secession of the state, payments were made in confederate money, and purchasers of school lands were not slow to complete their payments in that currency at par. During this period, the state auditor was the chief executive school officer, and made his report to the governor. The last school report, under the *ancien régime,* was made by William R. Miller, state auditor, to Governor Rector, who held office at the time of the secession of the state. In its printed form, it consisted of one leaf of a book about as large as Webster's Spelling Book, and states that there were then but two public schools in the state. Evidence from other sources shows that, by the peculiar system of financiering described above, by loss in confederate money and Arkansas war bonds, and from the usual casualties incident to a state of civil war, a very large proportion of the sixteenth-section and other school lands of the state was squandered, without creating any considerable permanent school fund. Of that which was created, the sum of $8,000, the last remnant, was invested in the purchase of medicines for the confederate troops; and the medicines were lost on a steamer which was wrecked on Brazos river, in Texas.

Two provisions of the Constitution of 1868 related to public schools. Section I. of Article VI. provided that "The executive department of this state shall consist of a governor, etc., and a superintendent of public instruction, all of whom shall hold their several offices for a term of four years." Article XI. related to education, and its several sections provided, (1) that the general assembly should establish and maintain a system of free schools for the gratuitous instruction of all persons between the ages of five and twenty-one years; (2) that the supervision of such schools should be intrusted to a superintendent of public instruction; (3) that a state university should be established; (4) that a school fund should be created from the sales of school lands, escheats, estrays, grants, gifts, one dollar capitation tax, etc.; (5) that no part of the school fund should be invested in the bonds of any state, city, county, or town; (6) that the distribution of the school fund should be limited to such districts as had kept a school for at least three months in the year for which the distribution was made; and that each child should be required to attend school at least three years; (7) that, in every district in which the school fund should be insufficient to support a school for at least three months in the year, the general assembly should provide by law for levying a tax; (8) that all lands, moneys, etc., held in the various counties for school purposes, should be reduced into the general school fund; and (9) that the general assembly should be empowered to raise money by taxation for building school-houses. In addition to these provisions, a section of the article on *finance, etc.*, made the purchase money for school lands payable into the state treasury, and obligated the state to pay interest at the rate of six per cent per annum, upon the same.

This constitution was adopted in February, 1868; and, upon the 13th day of March succeeding, an election for state officers was held, General Powell Clayton being elected governor, and Hon. Thomas Smith, superintendent of public instruction. On the 2d day of April ensuing, the first legislature under the new constitution met, and, in due time (July 23d), enacted the school law, which with certain modifications, few in number but very important in character, has ever since been in force in the state.

This law provided for the appointment of circuit superintendents, one in each of the ten judicial districts of the state, whose duties in their several circuits were analogous to those of the state superintendent, in supervising, making reports, etc. A school trustee was appointed in each school district, with the same duties as those already specified. The report of the school trustees were made annually to the circuit superintendents, who transmitted the information to the state superintendent, to be used in his biennial report. Under many difficulties and embarrassments, Superintendent Smith organized his department in August, 1868; and in December following, the trustees of the various districts were elected. In September, 1869, a special session of the state board of education—composed of the state and circuit superintendents — was held. At this time the only free schools existing in the state were a few for persons of color, established by the United States, through the agency of the Freedmen's Bureau. The resources of the school department consisted of (1) *saline lands*, about 20,000 acres; (2) *seminary lands*, about 1,000 acres; (3) *sixteenth-section lands*, about 841,000 acres. The original quantities of these lands, which were donated by the United States government for common school purposes, were two sections, each of the first two classes, and 928,000 acres of the third class. Of the saline and seminary land funds, about $12,000 in specie, war-bonds, confederate money, etc., had been transferred, after March 6th, 1861, to the general revenue fund of the state; and about $45,000 of outstanding notes, to the solicitor-general for collection. In all, the claims of the state for school lands sold and moneys loaned, with accrued interest, amounted to about three quarters of a million of dollars. The several amounts of the school fund on hand at the beginning and end of the period embraced in Superintendent Smith's first biennial report, were as follows:—

Oct. 1, 1868.	U. S. Currency.....	$ 2,691.98
	State Scrip........	56,302.97
	Total..........	$58,954.95
Oct. 1, 1870.	U. S. Currency.....	$22,201.37
	State Scrip.........	12,991.12
	Total..........	$35,192.49

During this period, the school revenues were subject to depletion from three causes: (1) The taxes on sixteenth-section lands were merged into the general revenue of the state; (2) The "fines, penalties, and forfeitures," levied by the various courts, were loosely handled by the collecting officers; (3) In many cases, the electors of the various school districts refused to authorize the levying of the local tax for school-houses; and (4) by an act approved March 2d, 1869, school-taxes were made payable in interest-bearing certificates issued by the state treasurer. Notwithstanding all these obstacles, the school system was able to present, in 1870, considerable progress since the preceding year, as will be seen from the following statistics:

	1870	1869
Number of children of school age.	180,274	176,910
" " " attending school	107,908	67,412
" " schools...............	2,537	1,489
" " teachers..............	2,302	1,336
" " teachers' institutes.....	41	12
Amount of money paid teachers..	$405,748	$188,397

The whole number of school-houses built prior to 1868, was 632; in 1869 and 1870, it was 657. The apportionment of the state fund for 1868—1869 was $377,919.94, and the district tax, $215,348.79. In addition to these evidences of progress should be mentioned the organization of the *State Teachers' Association*, July 2d, 1869; and the commencement of the *Arkansas Journal of Education*, Jan. 1st, 1870. The institutions for the blind and for deaf-mutes were also reorganized during the period referred to, and handsome buildings erected for their accommodation.

Superintendent Smith's second report, for the two years ending September 30th, 1872, presents striking evidence of the decadence of the newly established school system. Many of the school districts had become deeply involved in debt, and had levied exorbitant taxes to remove the incumbrance; the depreciated paper was destroying the schools and driving the best teachers from the state; and the circuit superintendents were neglecting the schools. The following was the condition of the school fund:

United States Currency...........	$14,510.84
5.20 Bonds.......................	24,186.25
State Scrip......................	56,804.22
Total................	$95,501.31

The amount of money distributed since Oct. 1st, 1870, was as follows:

United States Currency	$ 33,688.03
State Scrip	454,407.76
Total	$488,095.79

The balance on hand at the above date was $39,876.75, of which nearly the whole was in state scrip. The following general summary of statistics shows a decrease in nearly every item as compared with those of 1870:

	1872	1871
No. of children of school age	194,314	196,237
" " " attending school	32,863	69,927
" " teachers	2,035	2,128
" " teachers' institutes	25	31
Amount paid teachers	$353,624.90	$424,443.90
No. of school-houses erected	187	302

Almost the only encouraging feature of the period covered by Superintendent Smith's second report, was the opening of the Arkansas Industrial University (Jan. 22d, 1872), in the town of Fayetteville. Mr. Smith was succeeded in the office of superintendent by Joseph C. Corbin, who entered upon the duties of his office in 1872; and the only report which he issued was for the year ending September 30th, 1873. Prior to this, the general assembly passed a new revenue law, which was construed to repeal the provision of the former law appropriating two mills on the dollar out of the ordinary revenue of the state for school purposes. This reduced the amount of the semi-annual apportionment from $210,000 to $55,000, all of which was in state scrip, worth at the time about 35 per cent. The same legislature abolished the office of circuit superintendent, and substituted that of county superintendent. It also limited the local tax to a maximum of five mills; and a decision of the supreme court made even this tax payable in state scrip. The following are the principal items of the school statistics for the year 1873:

Attendance of pupils	59,587
Number of teachers	1,481
Number of school-houses	1,035
Number of teachers' institutes	26
Amount paid teachers	$259,747.08
Revenue raised for school purposes	$258,456.09
Amount of expenditures	$318,997.77

A new constitution was adopted in 1874, of which the following are the chief provisions in regard to education:—(1) That the state "shall ever maintain a general, suitable, and efficient system of free schools, whereby all persons in the state, between the ages of six and twenty-one years, may receive gratuitous instruction;" (2) That no school money or property shall be used for any other purpose; (3) That the general assembly shall provide for the support of common schools by a tax, not to exceed the rate of two mills on the dollar, on the taxable property of the state; a capitation tax of one dollar, and a local tax not to exceed five mills on the dollar; (4) That the supervision of the schools shall be vested in "such officers as may be provided for by the general assembly." Under this last provision, the duties of superintendent of public instruction were transferred to the secretary of state, "until otherwise provided by law."

Elementary Instruction.— The only common schools in the state at present (Nov. 1875) are those of the city of Little Rock, which were opened September 13th, 1875. The sole reliance of the mass of the citizens for educational advantages is, therefore, upon private schools, of which a large number were opened at the beginning of the school year. No school report has been rendered since that of Superintendent Corbin, in 1873, as the necessary duties of the secretary of state have rendered an active supervision of the schools impossible, and the returns from the local officers are very imperfect.

Normal Instruction.— The chief provision for the training of teachers in the state is the normal department of the State Industrial University. A course of two years and one of three years have been arranged, the former embracing all the studies likely to be taught in any of the common schools, and the latter, those of the high schools. Male applicants for admission are required to be 16 years of age, and females 14. A training school is operated in connection with this school. Besides this, Quitman College, in Van Buren county, is a normal school for the training of colored teachers. There is also a state teachers' association.

Superior Instruction.—The most prominent of the higher educational institutions of the state are the Arkansas Industrial University, at Fayetteville (q. v.), and St. John's College, at Little Rock (q. v.); the latter of which is under the control of the masonic fraternity.

Special Instruction.— The Arkansas Deaf-Mute Institute and the Arkansas Institute for the Education of the Blind, both at Little Rock, are the only institutions for special instruction. The former was incorporated as a state institution in 1868. The latter, the same year, was removed from Arkadelphia to Little Rock. The financial embarrassments of the state have greatly impeded the progress and efficient operation of these institutions.

Educational Journal, etc.—The last educational journal published in the state was the *Arkansas Journal of Education*, which suspended publication in 1872; and the only works on the schools of the state are the three educational reports of the state superintendents.

While the present educational condition of Arkansas is by no means cheering, it is not quite hopeless. The decadence of the school system, which a short time ago was so promising, is the result of financial, political, and social evils and misfortunes that have afflicted the state from its earliest history. Many of these evils, however, are already things of the past, of which only the effects remain. Under the present administration, much has been done towards developing the natural resources of the state; and there is no doubt that, in a few years, its educational prosperity will be restored.

ARKANSAS INDUSTRIAL UNIVERSITY, at Fayetteville, Arkansas, was provided for by an act of the state legislature in 1868, but was not opened until January 22., 1872. The law regulating the institution provides for 327 beneficiaries who are entitled to four years' free tuition. The value of the grounds, buildings, etc. is $180,000. The buildings will accommodate four hundred students, and consist of a brick edifice five stories high, 214 feet in length, with a depth in the wings of 122 feet, with five large and several small halls, and thirty classrooms. The report of the university for 1874 showed an attendance of 321 students, in its various departments, under the instruction of seven professors and three other instructors. The institution includes a preparatory and a normal department, a college of engineering, and a college of general science and literature. A college of agriculture and a college of natural science, with a school of military science, and a school of commerce, are also provided for; and an experimental farm for the agricultural college has been secured. The university library is as yet quite small. Gen. Albert W. Bishop is the president of the institution.

ARMY SCHOOLS. See Military Schools.

ARNDT, Ernst Moritz, a German patriot and author, was born Dec. 26., 1769, at Schoritz on Rügen, and died Jan. 29., 1860, at Bonn. He was appointed, in 1805, professor at the university of Greifswalde; but he wrote violently against Napoleon and, therefore, fled, after the battle at Jena, in 1806, to Sweden. In 1809, he returned, and henceforth took a prominent part in the national movement in Germany which led to the wars of liberation (1813 to 1815), and the overthrow of the French rule in Germany. In 1818, he was appointed professor of history at the university of Bonn; but, in the next year he was retired in consequence of his liberal sentiments. In 1840, he was re-instated by the new king Frederick William IV.; and, in 1848, he was a member of the National Assembly of Frankfort, which attempted the reconstruction of a united Germany. Arndt is chiefly famous in Germany as one of the foremost promoters of patriotism. One of his songs, *Was ist des Deutschen Vaterland?* was long regarded as the most popular national hymn; but was superseded in popular favor, during the Franco-German war, by *Die Wacht am Rhein*. Some of Arndt's numerous works are of a pedagogical character, the most important of which is *Fragmente über Menschenbildung* (Altona, 1805), which explains the principles of a rational education of man in accordance with the dictates of his nature. In opposition to the ideas of Rousseau, he insisted that the essence of man must not be sought in the sensuous nature of the isolated individual, but in his spiritual part, and in his relations to parents, family, society, and his native country. From this point of view, Arndt contends, with Pestalozzi, that the mother should be the first teacher of the child, and that her instruction should proceed from the concrete. He represents love, necessity, and freedom as the three powers which co-operate in the education of man. The work of these three great powers is conditioned by the bodily and spiritual development of the pupil. In childhood, it is chiefly the power of love, represented by the mother, which moulds the young mind, and instills into it the first notions of God, man, and life. The power of necessity must curb and discipline the vehemence of boyhood, and teach the habit of diligence. At last, in the age of ripe youth, love and necessity coalesce into the spirit of freedom, or self-control, which is the completion of every harmonious education. A few years later, Arndt gave an exposition of the same principles, with special reference to the education of princes, in his work *Entwurf der Erziehung und Unterweisung eines Fürsten* (Berlin, 1813). These educational works of Arndt exercised far less influence upon the rising generation of Germany than his fairy tales, and especially his patriotic songs, many of which are to be found in most German reading-books and thus have contributed very much toward shaping the German mind of the nineteenth century. In his autobiography, *Erinnerungen aus dem äusseren Leben* (Leipsic, 2d ed., 1840), Arndt treats fully of his own education. Biographies of Arndt have been written by Eugen Labes (1860), H. Rehbein and R. Keil (1861), and D. Schenkel (1866).—See also G. Freytag, in *Deutsche Allgemeine Biographie*, art. *Arndt*.

ARNOLD, Thomas, D. D., the illustrious English teacher and historian, was born at West Cowes, in the Isle of Wight, in 1795. He was educated at Winchester College and Oxford University, from the latter of which he obtained a first-class degree in 1814. He attained his greatest fame as head-master of Rugby School, to which position he was elected in 1828, and in which he continued till his death. In the course of instruction of this school, he introduced many improvements; but it was the system of moral teaching and training which he established, that gave to him and to the school their greatest distinction. He preserved among the boys the highest tone of moral and religious sentiment; and, with consummate tact, habituated them to the practice of the principles which he taught, making himself both feared and loved. His chief reliance was upon guiding the public opinion of the school, as the most powerful element of control in every community. For the practice of "fagging" previously in vogue in the school, he instituted a system of responsible supervision by the pupils of the highest class over the younger boys, thus giving full opportunity for the active exercise of those virtues which they had been taught. Rugby, however, by no means occupied all his time and attention. For some time he held a place in the senate of the London University, and a short time before his death, accepted the appointment of Regius Professor of Modern History at Oxford, where he delivered some introductory lectures. To this position he intended to devote his whole energies, retiring from Rugby; but his plans were frustrated by his sudden death, in 1842. His greatest literary [illegible] which he publish- [illegible] — 1840 — 1842 [illegible] the Second Punic War, [illegible] live to complete. [illegible] were varied and numer- [illegible] elevation of char- [illegible] wise efforts as a [illegible] and literary skill. [illegible] which he presented in [illegible] him to be con- [illegible] brightest ornaments of his age. — [illegible] *Life and Cor-* [illegible] 1844; also *Tom Brown's* [illegible] *R* [illegible] London and Boston, [illegible]

ARNOLD, Thomas Kerchever, an En- [illegible] and died in [illegible] for his school man- [illegible] Greek, Latin, Fr[illegible] other languages. These [illegible] extensively used in this country [illegible] England. They are based [illegible] practical drill in all [illegible] language to be taught. Mr. Arnold [illegible] a series of school [illegible] on various relig- [illegible] questions. His manuals [illegible] based on a system similar [illegible]

ART EDUCATION. Every complete sys- [illegible] provide for the cult- [illegible] faculties of the human [illegible] moral and spir- [illegible] and must, be- [illegible] necessary for the develop- [illegible] upon which [illegible] of every civilized [illegible] the agencies required [illegible] claims profound [illegible] which exists [illegible] the subject of [illegible] applied to the vari- [illegible] becomes a thing of [illegible] value. The train- [illegible] hand and eye, which is obtained by drawing is proved by experience to be of very great advantage to the operative in every branch of industry; indeed, in many occupations, drawing is indispensable to success. But the value is still greater if to this simple training, the culture of [illegible] and conception of forms and [illegible] is added, leading to skill in design [illegible] art of the highest value in very many departments of manufacturing industry. "Art-education", says an eminent authority, "embraces all those agencies and methods of training by which the sense of form and proportion is developed. It is successful when the student unerringly discriminates between what is ugly and what is beautiful, and expresses his ideas of form in drawing as readily as ideas of other sorts on the written page."

Art culture among the ancients must have been carried to the highest degree of perfection, as is obvious on an inspection of Egyptian, Assyrian, and more especially Grecian antiquities. The genius of Phidias and Praxiteles must have owed its development to the results of many centuries of previous culture. The Parthenon was the noblest achievement of the loftiest genius making use of the agencies and results of the most complete culture and education in art. We have, however, no history of that education in detail. Instruction in the art of design (γραφική) was quite general at Athens and in some of the other Grecian states; and Aristotle, in his scheme of education, attributes to it great importance as a means of cultivating the sense of the beautiful. The establishment of art-schools and schools of design for the masses is, however, of modern origin, and is due to a consideration, based upon experience, of the great value of general artistic skill in increasing the sources of national wealth. This will be fully shown as we proceed; but as immediately relevant to it we quote the following statement of the French imperial commission, in its summary of the inquiry on professional education: "Among all the branches of instruction which, in different degrees, from the highest to the lowest grade, can contribute to the technical education of either sex, drawing, in all its forms and applications, has been almost unanimously regarded as the one which it is most important to make common." Heretofore, in the struggle and conflict of nations for supremacy and power, it was believed they could depend exclusively upon armed men and heavy guns; but to-day the great nations of Europe rely on industrial education, and the general culture of the people. The World's Fair held at London, in 1851, revealed plainly to England that she was far behind her great rival France in the production of articles requiring skilled labor and taste, indeed, below all the other civilized nations except the United States. Convinced of her inferiority, she went vigorously to work to give general instruction in the fine and industrial arts, by establishing schools for special training, free of cost, to those whom the science and art department of the government had selected for art-masters. Art-schools were founded for instruction in drawing, modeling, and design, in many of the large cities and towns throughout the kingdom. The British official report for 1872 shows that there were, at that time, in England 122 industrial art schools; besides which there were 194,549 children receiving instruction in drawing in the "schools for the poor." Up to that time, there had been established one well-appointed art school of 190 students for every 210,000 of the population; so rapidly was instruction in art as applied to industry provided for and diffused among the industrial classes of Great Britain. But the results had, previous to this time, been already definitely shown. At the Paris Exposition of 1867, England stood in the first rank of artistic nations, and even surpassed some of those who previously had carried off the highest honors. This great advance made by the English from 1851 to 1867 alarmed the French. They saw they could no longer rely on that prestige which had always placed them at the head; and they, in turn began to reconstruct, improve, and increase their art-schools. The commission appointed by the emperor Napoleon III., after due consideration, made an elaborate report, and the government acted upon its recommendations. Immediately after the late war between France and Germany, the Prussian minister of commerce and industry issued a circular calling upon the government and the people to follow the example of France; and it is now being followed in all the schools of Prussia, from the primary school to the university. Not only in England, France, and Germany, but in nearly all the other European countries is this great movement in art-education in progress. The United States, alone of all enlightened nations, is making but little advancement and little effort in this direction. New York, Massachusetts, and a few other states have enacted laws concerning the teaching of free-hand drawing in the public schools, and in this way have shown some appreciation of the great importance of the subject.

During the first twenty-five years of the national independence of the United States, nothing was accomplished in art-education. All teaching was confined to the few lessons that were given by professional painters. Even at the commencement of the present century, no school had been established. In 1802, however, a proposition was made to found an institution for the promotion of the arts of drawing, painting, and sculpture, in the city of New York, under the name of *The New York Academy of Fine Arts*. On account of the want of public interest in the enterprise, and the inactivity of those who started it, the charter for the academy was not obtained until 1808. In 1805, the *Pennsylvania Academy of Fine Arts* was founded at Philadelphia by seventy-one citizens; and in Boston, in 1807, the *Public Library and Department of Fine Arts* was established. These institutions are still in existence; but the New York Academy only lasted till 1816. There is no evidence that there were any schools of importance connected with the first academies. The few artists who belonged to them probably practiced drawing from casts, and, it may be, sometimes from life. — Among the names of those who took an interest in art-matters at the early date here referred to, may be found some of the best men of the time; and at their head stood De Witt Clinton, certainly the foremost man in the State of New York. He was the president of the Academy, and delivered an address upon the Fine Arts when he retired from active participation in its affairs. According to the venerable Thomas A. Cummings, a veteran artist at this date (1876), this address was probably the first ever delivered in this country on that subject. It is likely that there were some artistic societies, classes, or clubs besides those mentioned, struggling into existence in cities like Boston, Philadelphia, Baltimore, Richmond, and Charleston, but of these we have but little or no history. It is quite certain that, up to 1816, no attempt had been made to instruct students anywhere in this country. In 1825, Samuel F. B. Morse was chosen to preside over a new association, just then formed, called the *New York Drawing Association*. It was out of the small number of artists who constituted this association, and who met three times a week to draw from casts, that the present *National Academy of Design* was established. Much dissatisfaction was caused among the members of the *Drawing Association*, on account of an attempt of Col. John Trumbull, the historical painter, acting as the president of the then almost defunct *Academy of Fine Arts*, to assume a kind of dictatorship over them. These pretensions, however, were stoutly and successfully repelled by president Morse and the young artists of the association. Col. Trumbull was evidently opposed to art-schools; and according to Mr. Cummings, he assailed the students of that day in a very rude and improper manner. The resolution of Morse and his associates established on a firm foundation the *National Academy of Design*, on the 18th of January, 1826, with twenty-five artists, and a life-school of eleven students. Mr. Morse delivered an address at the first exhibition of the new academy, in which he announced a new departure from the old forms and usages of the art-associations which had previously been established. His course was to be the same as that adopted and sanctioned by the academies of Europe. From 1826 to 1830, there was a bitter feud between the rival institutions, the *American Academy* and the *National Academy*,—the former supported by the renowned John Vanderlyn, and the latter by the illustrious and indefatigable Morse. The contest ended by the discontinuance of the older institution; but while it was in progress, the interests of art were neglected, and art-education sunk to a low ebb. Owing to causes that have not been explained, the *National Academy of Design* has never been able to establish and continue a first-class school for the education of students. On this account, the institution can hardly lay claim to be a national one, nor can it be said that it has kept pace with the educational institutions of the country.

Methods of Art Instruction.— The modes of drawing and the usages of art-schools are nearly the same now that they were in the Old World two hundred years ago; that is, in schools in which pupils are trained to be professional artists. After students have learned to draw from the flat, from lithographs, drawings, etchings, etc., on paper, they are required to draw from plaster casts, — mostly figures and fragments of the antique, statues, and busts. The teacher of drawing very often selects for the student those casts which are best suited to his taste, style, and ability. These casts are generally so arranged and illuminated as to show strong contrasts of light and shade; and each student is provided with an old-fashioned drawing-board, which is simply a board, generally about 35 × 25 inches, with two legs, resting upon the floor and thus supporting one end, while the other end rests on the lap of the student. A charcoal outline of the object to be drawn is first made. This being easily rubbed off, the student is thus enabled to get the outline with less trouble than would be possible with crayons, which are only resorted to after a correct outline has been obtained. — The *life-school*, as it is called, or more properly speaking, drawing from the living form, is generally conducted in the following manner. The model, or person who is to stand, or *pose*, is placed generally under the light, in whatever position may be chosen by the students. They then arrange themselves around the model, and begin their drawings. The model stands from twenty-five to fifty minutes in one position. A rest is then taken, and at will the model again assumes precisely the same position as before, and the drawing goes on until each student has finished.

Art Schools in the United States.—The number of art-schools or institutions affording art-instruction, in the United States, according to the Report of the U. S. Commissioner of Education, for 1874, is twenty-six; as shown in the following table.

Institutions affording Art Instruction in U. S.

NAME	LOCATION	When founded
School of Design of the San Francisco Art-Association	San Francisco, Cal.	1873
Yale School of the Fine Arts	New Haven, Ct.	1864
Art-Schools of Chicago Academy of Design	Chicago, Ill.	1867
Illinois Industrial University	Urbana, Ill.	1874
Schools of Art and Design of Maryland Institute	Baltimore, Md.	1848
Art-School	Baltimore, Md.	1874
Boston Art-Club	Boston, Mass.	1855
Lowell School of Practical Design	Boston, Mass.	1872
Mass. Inst. of Technology	Boston, Mass.	1861
Mass. Normal Art-School	Boston, Mass.	1873
Worcester County Free Institute of Industrial Science	Worcester, Mass.	1865
St. Louis Art-School	St. Louis, Mo.	1872
Manchester Art-Association	Manchester, N. H.	1871
Brooklyn Art-Association	Brooklyn, N. Y.	1861
Cornell University	Ithaca, N. Y.	1865
Ladies' Art-Association	New York, N. Y.	1870
National Academy of Design	New York, N. Y.	1820
The Palette Club	New York, N. Y.	1869
Cooper Union Art-Schools,		
1. Women's Art-School	New York, N. Y.	1855
2. Free School of Art	New York, N. Y.	1857
College of Fine Arts of Syracuse University	Syracuse, N. Y.	1872
School of Design of the University of Cincinnati	Cincinnati, O.	1869
Toledo University of Arts and Trades	Toledo, O.	1872
Franklin Institute Drawing Classes	Philadelphia, Pa.	1824
Art-Classes of the Penns. Academy of Fine Arts	Philadelphia, Pa.	1806
Philadelphia School of Design for Women	Philadelphia, Pa.	1847
Pittsburg School of Design for Women	Pittsburg, Pa.	1865

Of these institutions three are the great art-schools at Philadelphia, New York, and New Haven; namely, the *Pennsylvania Academy of the Fine Arts*, the *National Academy of Design*, and the *Yale School of the Fine Arts*. Ten of these institutions are for the special training of artists. Three others, the *Boston Art-Club*, the *Palette Club*, and the *Ladies' Art-Association*, are voluntary associations of artists, with life-classes, etc., for their own improvement.

In some of these schools nearly every kind of art-culture receives attention, — drawing from the flat, from simple objects, casts, the antique, paintings, and from life; modeling in clay, wax, and plaster; painting in oil and water colors; architecture; and fresco painting. In others, the instruction is given with special reference to the practical application of science to art, to the education of skilled artisans, to mechanics, manufacturers, etc.

The number of art schools is so small, compared with the number of inhabitants, that, in fact, but very little national progress in art-culture can be expected. On account of the lack of opportunities for studying painting and sculpture, most students who have the means go to Europe to obtain those facilities which are not to be found in this country. According to the Report above quoted, there are only 27 *art-museums* and *art-collections*, of colleges, etc., in the United States. Of these seven are in New York, six in Massachusetts, two each in Connecticut and Pennsylvania, and one each in Illinois, Indiana, Louisiana, Maryland, Michigan, New Hampshire, Ohio, Rhode Island, Vermont, and the District of Columbia. The incomes of eight of these institutions, in 1874, were reported as amounting in the aggregate to about $200,000; but of this, $70,000 was reported as the income of the *Corcoran Art Gallery*, at Washington, which has an endowment of $1,000,000. Eleven of the twenty-seven institutions above referred to are art-collections connected with colleges or universities, and most of them are of recent foundation,—five since 1872.

Instruction in Drawing.—There is a growing appreciation of the value of drawing as a branch of common school instruction, and a much clearer perception of the fact that to teach drawing systematically in the schools of the people is to lay the foundation not only of national art-culture, but of national progress in the industrial arts. The state superintendents and many of the city superintendents of public instruction express this sentiment very generally and strongly, and earnestly advocate the encouragement of drawing in the public schools, especially for the purpose of educating that class of pupils who are to become the future skilled laborers and artisans of the nation. As an illustration, we quote from the superintendent of schools in Indiana: "Indiana, as much as any state in the Union, needs to look after these interests, and needs to educate her children for the work which must either be done by them or by some more skillful class, imported from abroad to supply their places. Her wood, wool, minerals, and other rough materials are carried away and manufactured into the commonest articles of daily use, and are returned to the state as imported articles at an enormous cost. . . . The skill of our native workmen is limited through want of training, and our labor is not, therefore, of the most profitable quality. That our system of education is in this point defective, and that it needs such improvement as shall look to the preparation of persons for skillful labor,' are no longer matters of question." (See *Report*, 1874.) He, therefore, recommends that the statutes of the state be so amended as to include drawing as one of the common school branches of study. In Massachusetts, much has been done in this direction, in compliance with the law of 1870, which provided that "any city or town may, and every city and town having more than 10,000 inhabitants shall, annually make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age." Of the twenty-three cities and towns of the State, in 1874, twenty had complied with the statute. In 1871, on the invitation of the school committee, Mr. Walter Smith, head-master of the school of art in Leeds, England, took the direction of this branch of instruction in the public schools of Boston; and subsequently was appointed State-Director of art-education. In 1873, the State Normal Art-School was established at Boston, under the direction of Mr. Smith, for the training of art teachers, or teachers of industrial drawing, which institution, in 1874, had 12 instructors and 240 students. The results of this system, so complete and admirable, have thus far been eminently successful. The state of New York, following the example of Massachusetts, in 1875, passed a law requiring industrial drawing to be taught in all the common schools of the state. (See DRAWING.)

Mode of Establishing Art Schools.—The first thing necessary for the establishment of art-schools, or for the introduction of drawing, modeling, and designing into schools already established, is to obtain capable teachers, or art-masters. These must be trained in the art in normal schools; or the officers of school-districts may institute classes for this purpose. The *Cooper Institute*, in the City of New York, and the *School of Design*, in Cincinnati, and some others, have prepared a considerable number of excellent art-teachers. The state normal schools have also done something in this direction, but have the facility and means, if properly applied, to do very much more. The customary mode of procedure in art-instruction has already been explained; but the various methods of instruction in drawing will be given in another part of this work. (See DRAWING.) Modeling has not yet become as prominent in industrial art-education as its importance demands. Without doubt, the modeling of real forms is much more beneficial for the future artisan than the representation of forms upon flat surfaces. It will be readily perceived that the wood-carver, cabinet-maker, machinist, jeweler, and all others whose work consists in the production of forms, would be better trained in this way. To the designer of fabrics, drawing on flat surfaces is the preferable practice; but in nearly all other cases, modeling affords the most efficient training. A set of objects classified and graded, from the simplest to the most complicated forms, as well as compositions for drawing and modeling purposes, is of great value in this instruction; and, accompanying this, there should be a comprehensive text-book, or manual, giving directions as to the modes of teaching, the arrangement of rooms and studios, the adjustment of lights, and the placing of casts and models; together with a full description of the materials and instruments needed at each stage and in each department of the instruction. For valuable information and suggestions in this direction, see *Art-Education*, by Prof. C. O. THOMPSON, in *Report of Commissioner of Education* (1873).

Importance of Art-Education.—This country can compete with foreign nations in the production of articles requiring taste and skilled labor only by establishing schools for instruction in the fine arts and in industrial art, so that the native artisans may be properly educated. Millions of men, women, and children, in Europe, are at the present time receiving an industrial art-education at the public expense; and the United States, through the state or national governments, must make a similar provision. The following facts clearly show this necessity. In 1874, there were exported from the United States articles upon which skilled and mechanical labor had been expended, of the value of $24,631,835; while the value of such articles imported, was $177,857,132. In the same year, the articles of taste and skilled labor exported from France amounted to $434,513 890, and from England, to $384,787,944. The contrast presents an instructive lesson as to the importance of art-education in its relation to national wealth and prosperity.—See *Modern Art-Education* (Boston, 1875); *Official Report of the Vienna Exposition* (1873); *Reports of U. S. Commissioner of Education* (1872, -3, -4.)

ARTISANS, Education of. See TECHNICAL EDUCATION.

ARTS, Liberal. The term *arts*, or *liberal arts*, was, during the middle ages, applied to certain studies which constituted an essential part of a learned education. The full course of study, at that period, embraced "the seven liberal arts," three of which—grammar, logic, and rhetoric—composed what was called the *trivium* (the triple way to eloquence); and the remaining four—music, arithmetic, geometry, and astronomy—constituted the *quadrivium* (the quadruple way). The term *faculty of arts* denoted, in the universities, those who devoted themselves to philosophy and science, in contradistinction to the faculty of theology, of medicine, or of law. *Master* (Lat. *magister*) was used to designate one who taught the liberal arts; and *doctor*, one who taught or practiced divinity, law, or medicine. The first degree (*gradus*) of proficiency in the arts, instituted, as it is said, by Gregory IX.

about the middle of the 13th century, was that of *bachelor* (Lat. *baccalaureus*); and the second that of *master*, which originally conferred the right, and indeed imposed the duty, of teaching one or more of the liberal arts. This title, in the colleges and universities of the United States, England, and France, is now merely honorary. (See DEGREES.)

ASCHAM, Roger, a celebrated English scholar and teacher, who flourished during the reigns of Henry VIII., Mary, and Elizabeth, was born in 1515, and died in 1568. He graduated at St. John's College, Oxford, in 1537, became a college tutor, and was appointed to read Greek in the public schools. In 1545, he published *Toxophilus*, or the *School of Shooting*, in which, as Dr. Johnson says, "he designed not only to teach the art of shooting, but to give an example of diction more natural and more truly English than was used by the common writers of that age." In 1548, he was appointed teacher of the learned languages to the lady Elizabeth, afterwards queen, and continued to perform that service for two years. In 1553, he was appointed Latin secretary to Queen Mary, and was continued in the same office by Elizabeth, besides acting as her tutor in Latin and Greek. His most noted work is "*The Scholemaster, or a Plain and Perfite Way of teaching Children to understand, read, and write the Latin Tonge,*" published by his widow in 1571. Dr. Johnson said, this work was "perhaps the best advice that was ever given for the study of languages;" and a recent authority says: "This book sets forth the only sound method of acquiring a dead language." — See *Life of Ascham*, written by DR. JOHNSON for an edition of his English works, published in 1761; GRANT, *De Vita Rogeri Ascham;* WOOD, *Fasti Oxonienses;* HARTLEY COLERIDGE, *Lives of Northern Worthies*, vol. II.; QUICK, *Essays on Educational Reformers* (London, 1868.) The last mentioned work contains an excellent sketch of Ascham's method.

ASSOCIATION OF IDEAS. By this is meant that relation or connection which is formed between ideas, so that one immediately suggests the other, hence called by Dr. Brown the *principle of simple suggestion*. This law of mental operation demands a most careful consideration in both moral and intellectual education. Feelings of pleasure and pain are often associated with certain ideas or objects in the minds of pupils at school, and thus control their whole after life. Antipathies, prejudices, or predilections are thus so firmly fixed, that they can never be eradicated. The law of association, rightly applied by the teacher, may thus be used to establish in the minds of his pupils an abhorrence of meanness and wrong, of falsehood and dishonesty, which will go far toward forming a thoroughly virtuous character. This law has a very important application in the intellectual training of the young, and in the general cultivation of the mind. Here we are to consider the various ways in which the law of association operates. (See FACULTIES, DEVELOPMENT OF.) The power to control the succession of our ideas or thoughts very much depends upon the habits we may have formed in establishing these associations. If the ideas with which a person's mind is stored are connected only by arbitrary or accidental associations, he will find it difficult to arrange his thoughts on any subject in a regular, logical order. On the other hand, there are minds so trained as to be able, at any moment, to command their ideas upon any subject with which they are acquainted, so that they flow forth in an unintermitting logical stream. Macaulay says of Sir James Mackintosh, "His mind was a vast magazine, admirably arranged; every thing was there, and every thing was in its place. His judgments on men, on sects, on books, had been often and carefully tested and weighed, and had then been committed, each to its proper receptacle, in the most capacious and most accurately constructed memory that any human being ever possessed. It would have been strange indeed, if you had asked for anything that was not to be found in that immense store-house. The article which you required was not only there; it was ready; it was in its own proper compartment. In a moment it was brought down, unpacked and displayed." This admirably expresses, of course in a very high degree of development, and partly as the result of a natural constitution of mind, the intellectual quality to be aimed at by the teacher, in connection with the association of ideas. It follows, too, from this that the law by which ideas become permanently associated by means of repetition, should have a most important place in the consideration of the teacher. Certain branches of knowledge require the special application of this law; such as arithmetical tables, grammatical paradigms, and all other things that, having no logical relations, are to be arbitrarily associated. The point to be gained in such acquisitions is to connect these ideas in the mind in such a way that one will instantly, and, as it were, automatically, suggest the other. The perceptions of sight and hearing may both be brought into play in accomplishing this. The former are, without doubt, the strongest and the most enduring, as Horace truly says,

> Segnius irritant animos demissa per aurem,
> Quam quæ sunt oculis subjecta fidelibus.

Hence the use of the blackboard and slate, particularly the former; also the importance of repeating aloud from the printed page. (See INTELLECTUAL EDUCATION, MEMORY, MNEMONICS, and ROTE-TEACHING.)

ASTRONOMY (Gr. ἄστρον, a star, and νόμος, a law), the science which treats of the heavenly bodies, has peculiarly strong claims to a place in every educational scheme of study, both as a means of intellectual training, and on account of the practical value of the class of facts which it embraces, as well as its ennobling influence upon the mind of the student. The progress of this science in modern times has been perhaps the most interesting feature of the intellectual history of the period, and its cultivation in this country has shed a peculiar luster upon American scientific and mathematical genius. The immediate results of this study not being so obvious as those of most others to which is universally conceded a place in the courses of instruction prescribed for common schools, it has been in these schools, comparatively speaking, a neglected subject. But the science to which we owe our means of measuring time, of locating places on the surface of the earth by longitude and latitude, of fixing the boundaries of countries and sections of country, of accurately mapping out coast-lines, of navigating the ocean, of ascertaining the magnitude and exact figure of the globe which we inhabit, and determining its relations to the universe, certainly should not be overlooked. Primarily, astronomy is a science of observation. Its materials are observed facts; but it differs from many other natural sciences in that the observed facts, far from explaining themselves, demand a peculiar exercise of conception, judgment, and reason, in order to infer from them the truths which they obscurely indicate. Thus, when we observe the varying apparent diameters of the sun and moon, the phenomena of eclipses and tides, the progressions, stations, and retrogradations of the planets, etc., we have advanced, however accurate our observations, but little toward a solution of the mysteries involved in these appearances. We must conceive how, under a general hypothesis of the structure of the solar system, these phenomena are caused, since the phenomena often seem to be at variance with the facts; *e. g.* the apparent motions of the planets appear to contradict the general truth, or law, of their eastward orbital motion.

In teaching this subject, the order of investigation—the analytic method, should be at first adopted, for two reasons: (1) because in this way we are able to impress upon the mind of the pupil clearer conceptions of fundamental facts, and (2) because he will thus form the habits of thought which are particularly needed in the study of this science. We should insist upon his observing for himself all the more obvious phenomena, and then stating, as fully and accurately as possible, the result of his observations. It is astonishing how many persons go through the world, filling the measure of a long life, without casting any thing but an indifferent, uninquiring, and uninterested glance at the glories of the stellar firmament. So it is also with children, before their attention is attracted, and their interest aroused, to observe the wonders of the heavens. The teacher, therefore, should lead his pupils, by questioning them, to notice some of the most ordinary phenomena; as the rising and setting of the sun and the moon, the phases of the latter, the apparent diurnal revolution of the stars, the positions and apparent movements of the larger and more conspicuous planets among the stars, the ebb and flow of the tides, the solar and lunar eclipses, etc. Finding, from such questioning, that they have really been inattentive to what they might readily have observed, the pupils will strive to see these things for themselves, and will thus, in a short time, acquire such an experience of their own, as will enable them to pursue the study with interest and success. As soon as they have acquired a clear conception of these natural appearances, their attention should be called to the explanation of them; and in this, for a short time at least, it would be well to let the pupils try to think out for themselves some hypothesis to account for what they have seen, and not to give them the correct scientific explanation until they have exhausted their own conjectures. For, it is not so much facts that we desire to communicate as mental habits; and, by the process here recommended, whatever facts are finally imparted, though they may be few, will be indelibly impressed upon the memory. This process is, however, strictly in accordance with the educational axiom, that the pupil should be told nothing which he may be made to discover for himself; to which may perhaps be added, that he should be told nothing until he has endeavored to discover it for himself, and has failed in the effort. (See SCIENCE TEACHING.) After this preliminary instruction, an elementary course in astronomy would embrace the following topics arranged in the order of presentation:—(1) The *earth*—its form, magnitude, motions, etc., with the phenomena connected with it, and arising from its relations to the sun, such as day and night, and the seasons; (2) The *solar system*—its general arrangement, the bodies of which it is composed, with their magnitudes, distances, periodic times, the position of their orbits and axes, and their apparent motions; (3) The *circles etc. of the sphere;* as equator, equinoctial, ecliptic, meridians, tropics, polar circles, longitude and latitude, both terrestrial and celestial, declination and right ascension, the horizon, vertical circles, altitude and azimuth, etc. If the preliminary instruction has been correct and thorough, these various tropics can be taught in such a manner as, at every point, to appeal to the learner's intelligence, and, not as a mass of arbitrary facts, encumbering his memory for a while, to drop out afterwards as useless lumber. For example, if we would lead his mind to a clear idea of the use of longitude and latitude on the surface of the earth, we ask him to locate, that is, to describe the location of, any point on the surface of the globe. He will soon be led to perceive that this cannot be done without some standards of reference; and thus the use of the equator and meridians will become obvious, and, in a similar manner, that of altitude and azimuth, in locating the positions of stars and planets in the visible heavens, or right ascension and declination, in fixing their places in the celestial sphere. No part of this science need be taught arbitrarily. Even the numerical facts, as distances, magnitudes, periods of revolution, etc., should, in part at least, be worked out, however rudely, for the student from the data of observation; or he should be required to work them out himself, after being taught the principles and methods involved. Thus, the teacher may begin with the diameter of the earth, and show how this has been determined; then the distance of the sun from the earth, explaining in this connection the nature and use of parallax; then the linear diameter of the sun from its apparent diameter; then the sidereal year of the earth, and the sidereal periods of the planets from their observed synodic periods; and next the distances of the planets from an application of Kepler's third law, etc. In this way, the whole subject will be so woven together in the pupil's mind, that it will be impossible for him to forget its fundamental principles, however few of its facts of detail he may retain. After such a course, it will be a very simple matter to present for his study the other important topics comprehended in the general subject.

The use of diagrams and apparatus should be constantly resorted to in giving the instruction here marked out: but great care should be observed to prevent the use of apparatus from superseding or obscuring the ideas obtained from the observation of nature itself. The student must come down to the apparatus from a clear conception of the actual phenomena, using the machine to apprehend the manner in which the phenomena occur. Very simple apparatus is much to be preferred to cumbrous and complicated machinery,—admirable, perhaps, as pieces of ingenious workmanship, but of little value for the purpose of illustration. The student should, however, be thoroughly practiced in the use of the globes, as a very essential part of the training comprehended in this branch of instruction. The use of a telescope, of at least moderate power, is also a valuable means of augmenting both the interest and information of the student, especially in connection with the study of uranography, which is certainly one of the most useful as well as entertaining departments of astronomical science. In this part of the study, a good planisphere will prove a valuable adjunct.

The religious aspects of the study should not be lost sight of in giving this instruction. The student should be constantly reminded that, in studying the phenomena and laws of the material universe, he is contemplating the works of an infinitely wise and beneficent Creator, who has wonderfully endowed us with faculties to behold the splendor of his works, and, in some degree, to conceive of their vastness. Says a distinguished German educator: "Astronomy is, more than any other science, valuable as a study for youth. None will seize so strongly and fully upon the youthful mind. It hardens the body, sharpens the senses, practices the memory, nourishes the fancy with the noblest images, develops the power of thinking, destroys all narrow-mindedness, and lays an immovable foundation for faith in God."

ATHENEUM, or **Athenæum** (Gr. *'Αϑηναῖον*, a building dedicated to Athena, or Minerva, the tutelary goddess of Athens), was the name applied to a temple at Athens, in which poets and scholars used to meet and read their productions. At Rome, a celebrated institution of the same name was founded by the emperor Hadrian, on his return from the east, about 133 A. D. It existed until the 5th century, and also served as a school in which teachers, specially appointed for the purpose, gave instruction in poetry and rhetoric. In modern times, this name is frequently used to denote a scientific association or the building in which such an association meets. In Belgium and Holland, it is used to designate a school of a higher grade, ranking next to the university. (See BELGIUM, and NETHERLANDS.)

ATHENS, the capital of ancient Attica, one of the political divisions into which Hellas proper was divided, is famous as the city in which Greek science and education attained the highest degree of perfection. The educational laws of Athens constitute a part of the legislation of Solon. (See SOLON.) They are, in some respects, in direct opposition to the principles which regulated public education at Sparta. (See SPARTA.) While the Spartans almost exclusively aimed at developing the highest perfection of the body, at Athens a cultivated mind was regarded as the highest product of education. All the Athenian children, rich and poor, had to attend school and to learn how to read; and tardiness in attending school as well as truancy was punished by a fine. Pupils were not admitted to school before their seventh, nor after their tenth year of age. After attending school for several years, poor children were required to be employed in agriculture, commerce, or some trade; while the children of wealthy parents devoted themselves to music, hunting, philosophy, or similar occupations. If a father neglected to have his son instructed, the son was not bound to support him in his old age. The elementary schools had at first one, subsequently two teachers,—the grammatist, who taught reading and writing (*τὰ γράμματα*), and the critic, who read the classics with the children, explained to them the poets, and heard them recite poems. Homer's works were in almost every school; and, it is said, Alcibiades, on one occasion, boxed his teacher's ears because he did not find a copy of Homer in his school. The second book of the Iliad, which enumerates the tribes and princes who followed Agamemnon to the Trojan war, and the allies of the Trojans, supplied the outline of the instruction in geography, history, and genealogy. The grammatist first taught the children the alphabet, the formation of letters into words, and reading; directing them to pay special attention to long and short syllables, to correct accentuation, and to euphonious pronunciation. When they had acquired a sufficient knowledge of reading, instruction in writing began, embracing within its scope both tachygraphy (short-hand writing) and calligraphy. The use of signs for abridgments was known to the Athenian short-hand writers. The letters were drawn by a *stylus* (a sharp-pointed iron instrument) on wax tablets, and copied by the children. The use of ink was also known. It was prepared of soot and gum, and applied to parchment, linen, or Egyptian paper (*papyrus*), by means of a brush or tube. All the children were required to learn music and to play on the lyre or cithara. Many learned also to play on the flute. The instruction in music was difficult, as the Greeks used a very complicated system of notation. Among the ancient Greeks, however, *music* (*μουσική*) had a much more comprehensive signification, embracing grammar, rhetoric, and poetics. The school-house (*τὸ διδασκαλεῖον*) had benches for the boys, and a chair or pulpit (*καθέδρα*) for the teacher. The teachers of the elementary schools enjoyed but little reputation in consequence of the small amount of their knowledge and their severity toward their pupils. The children of affluent parents were educated in the higher branches of study, as well as trained by regular bodily exercises in the *gymnasia*. All the children were obliged to take part in the gymnastic exercises, in order that, by a proper physical development, they might be fitted for their duties as citizens, both in peace and war. At the head of each gymnasium, was the gymnasiarch, who was elected by the citizens for the term of one year, and who not only did not receive any salary, but had to pay for the oil which was used for the anointment of the pupils. The gymnasiarchs were assisted by inspectors who had to maintain order, discipline, and cleanliness. The boys were required to attend at one of these institutions for a term of two years, but they were allowed to make their own selection. They practiced in these institutions jumping, running, climbing, riding on horseback, driving chariots, wrestling, throwing javelins and quoits, fencing, and similar exercises. Special attention was given to swimming, which all Athenian boys had to learn. Every gymnasium had a bath which was closed at sunset, and which strangers, during bathing hours, were forbidden to enter upon penalty of death. The private tutor (*παιδαγωγός*) of an Athenian family was generally a trustworthy slave, to whose care children were committed on attaining their sixth or seventh year. He went with them to and from the school and gymnasium, and was rather their custodian than their teacher. The latter (*διδάσκαλος*) instructed them in grammar, music, and other branches of learning. The education of girls was almost exclusively left to their mothers, and was generally much neglected. Orphan children, whose parents had fallen in battle, were carefully educated in the public institutions at the expense of the state. —See Schmidt, *Geschichte der Pädagogik*, vol. I; Wachsmuth, *Hellenische Allerthumskunde*, vol. II.; H. I. Schmidt, *History of Education* (N. Y., 1842); Grote, *History of Greece*, vol. VIII. (N. Y., 1859).

ATLANTA UNIVERSITY, at Atlanta, Ga., was organized in 1869, is non-sectarian, and offers the advantages of education to either sex, without regard to race, color, or nationality. It was established in accordance with a plan formed early in the history of the work of the American Missionary Association in the South, the means being furnished by the Freedmen's Bureau and the state of Georgia, as well as by the Association. The value of its grounds, buildings, etc., is estimated at $100,000; and by a law passed in 1874, it receives an annual appropriation of $8000 from the State. Its library contains about 3000 volumes. In 1874, its corps of instructors numbered 14; and the whole number of students was 236: in the preparatory department 46; in the collegiate, 18; in the theological class, 3; and in the normal courses, 169. The normal department has supplied a large number of teachers for the schools of the State. The president of the institution is Edmund A. Ware, A. M. Its annual tuition fee is $24; but all pupils are required to work for the institution at least one hour a day.

ATLAS is the name applied to a collection of maps, first thus used by Mercator in the sixteenth century, the figure of Atlas, bearing the globe on his shoulders, being on the title-page of his book of maps. Atlas, in the ancient mythology, was one of the Titans, who for the crime of attempting to take heaven by storm was compelled to bear the vault of the heavens. Some suppose that by this myth is communicated the fact that a certain king, named Atlas, labored to solve the astronomical problem of the starry universe. The first important atlas published in this country was that of Jedidiah Morse in 1775. Vast numbers of this work were issued; and Blackwood's Magazine remarked, that, it had quite superseded all other works of the kind in this part of the world. Many new editions of the work were subsequently published. That of Sidney E. Morse in 1823 was widely noted; and of this an edition with cerographic maps afterward had a very extensive sale down to comparatively recent times. Among the most important and valuable atlases, apart from school geographies, at the present time, may be mentioned Stieler's *Hand-Atlas*, issued from Justus Perthes's world-renowned cartographical establishment at Gotha, under the editorial supervision of A. Petermann (completed in 1875). These maps are noted for their minute accuracy. Black's and Johnston's Atlases, published in England, are of great merit and value. Von Spruner's *Historico-Geographical Atlas*, and Menke's *Orbis Antiqui Descriptio*, also deserve to be mentioned. Among astronomical atlases, those of R. A. Procter are the most elaborate and correct.

ATTENDANCE, School. This is an important subject of consideration in estimating the effectiveness of any system of public education, as showing what proportion of the community participates in its benefits. Educational statistics are too imperfect and too deficient in uniformity to render any comparison of different states and countries in this respect entirely reliable. The average attendance, accurately computed, as compared with the entire school population, can alone show in what degree the people of any state or country participate in the advantages of the education provided by the government, and, consequently, the need of measures designed to induce or enforce school attendance. The annual average attendance is usually found by adding together the whole number of pupils present at each session during the year, and dividing the sum by the number of sessions. Of course, this does not afford an accurate basis for comparison where the schools are kept open during different periods of the year; since a school which has been kept open all the year would, with the same number of pupils, show no larger average attendance than one kept open only one half the year. To rectify this, the aggregate number of pupils in attendance at all the sessions is often divided by a fixed number, without regard to the actual number of sessions. This method is sometimes legally enjoined for the purpose of an equitable distribution of the school moneys. Obviously, both the actual average and statute average are needed to ascertain the true effectiveness of a system of schools. The average attendance compared with the "average number belonging" is useful as showing the temporary regularity or irregularity of attendance, arising from various local or incidental causes. (See ABSENTEEISM.) It is generally conceded that in the United States — particularly in the Northern and Western States — there are but few native children who do not attend school some portion of the year, or who have never attended any school during their lives. It is chiefly among the foreign population, that the opportunities for school attendance are neglected.

Table of School Attendance.

STATE	Per cent of enrollment on school pop.	Per cent of attendance on school pop.	Per cent of attendance on enrollment.
Alabama	35.8	27.1	75.6
Arkansas	?	16.9	?
California.......	73.9	44.3	60.0
Connecticut	86.3	48.2	55.8
Delaware.......	39.3	?	?
Florida..........	31.7	23.7	74.9
Georgia.........	30.9	19.3	62.4
Illinois	70.5	40.8	57.8
Indiana.........	74.6	47.5	63.7
Iowa	72.1	41.8	62.2
Kansas.........	68.1	38.9	57.1
Kentucky.......	?	26.8	?
Louisiana.......	26.5	15.9	60.2
Maine...........	54.4	49.0	89.8
Maryland........	49.2	23.6	48.6
Massachusetts .	100	71.8	70.7
Michigan.......	74.9	38.8	51.7
Minnesota	61.3	?	?
Mississippi	63.8	31.4	49.2
Missouri.........	52.6	29.8	56.7
Nebraska	65.3	64.1	98.2
Nevada	76.3	45.8	59.9
New Hampshire.	94.5	64.3	68.3
New Jersey.....	62.5	32.3	51.6
New York	65.4	32.3	49.3
North Carolina..	42.1	28.1	66.6
Ohio............	71.8	43.5	60.8
Oregon	50.5	37.1	73.3
Pennsylvania....	70.8	45.3	63.9
Rhode Island....	89.7	55.8	61.9
South Carolina ..	43.7	?	?
Tennessee.......	60.2	37.5	62.3
Texas	51.6	38.6	74.8
Vermont	87.3	55.9	64.0
Virginia	39.8	22.6	56.7
West Virginia...	62.4	38.7	63.0
Wisconsin.......	61.1	39.8	65.1

The above table is chiefly based on returns made to the Bureau of Education at Washington (see *Report of Commissioner of Education for* 1874), and obviously shows, except in Massachusetts, great irregularity of attendance, as compared with the census enumeration of children of legal school age. The variations in the latter in the several States must be taken into account in the consideration of these comparative statistical facts. (See SCHOOL AGE.)

In Delaware, Iowa, Kansas, Minnesota, Mississippi, Missouri, Nebraska, New York, and West Virginia, the school age is the same—5 to 21; in Florida, Illinois, Indiana, Louisiana, North Carolina, Ohio, Pennsylvania, and Wisconsin, it is from 6 to 21; in Georgia, Nevada, Tennessee, and Texas, it is from 6 to 18; in California, 5 to 17; Connecticut, 4 to 16; and in Massachusetts and Rhode Island, 5 to 15. The excess of attendance over the enumeration in Massachusetts, indicates that pupils are permitted to attend school who have not as yet reached, or who have passed, the legal school age.

The percentage of population between the ages of 5 and 15 enrolled in the schools in 1872—3 was, in Alabama, 38; Delaware, 59; Florida, 42; Maine, 90; Maryland, 67; Mississippi, 70; Missouri, 88; North Carolina, 51; South Carolina, 46; Rhode Island, 91; Tennessee, 50; Texas, 56; Virginia, 51; West Virginia, 67.

In England and Wales, the average attendance at the public schools, in 1873, was about 28 per cent of the population of school age (between 3 and 13); and about 69 per cent of the total enrollment; and, consequently, the enrollment was about 41 per cent of the school population. Under the compulsory education act in force in that country, the school attendance had considerably increased. (See ENGLAND.) A careful comparison of the census returns of different countries shows that, on the average, the children between the ages of 6 and 12 constitute about 17 per cent of the entire population. Comparing this rate with the following percentages of school attendance as compared with population, we may ascertain approximatively the relative rate of attendance in each country. In Saxony the school attendance is about 20 per cent; in Prussia, 15 per cent; in Norway, 14 per cent; in the Netherlands, 13½ per cent; in Denmark, 13 per cent; in Scotland and Protestant Switzerland, 11 per cent; in Belgium, 11 per cent; in Austria, 10 per cent; in England, 9 per cent; in Ireland and Catholic Switzerland, 7 per cent; in France, 5 per cent; in Portugal, 1¼ per cent; in Italy, 1 per cent; in Greece, as 1 to 118; in Spain, as 1 to 170; and in Russia, as 1 to 700.

Mr. Francis Adams, in his work on the *Free School System of the United States* (London, 1875), remarks, in connection with a comparison of the school attendance in this country with that of England: "While in England we have a more select enrollment, and, consequently, a more regular attendance than in many of the States, — some of them the principal Northern and Western States—yet, so far as concerns our hold upon the great mass of the population, we stand only on a level with some of the most backward of the old slave states. I do not forget that our average attendance is estimated upon a longer school year than that in most of the states, but against this fact may be set the later school age in the United States; and where allowance is made for every difference which would tell in our favor, there can be but one conclusion—that, in the work of getting the masses into school, we are still far behind a country in which absenteeism and irregularity of attendance are admitted, on all hands, to be the most crying evils under which their system labors."

There is considerable difference in the school attendance in cities and in rural districts, greatly in favor of the former, owing to the difference in circumstances. In summer, the children in the country are kept from school to assist in the rural labors of their homes; and in the winter they are often prevented from attending school by the long distance, which they have to travel, frequently over bad roads, in order to reach the school. The following exhibits the attendance in some of the large cities of the Union:

City	Per cent of attendance on populat.	Per cent of attendance on whole enrollment	Per cent of attendance on average enrollm't.
Baltimore	7.7	55.0	80.
Boston	12.2	75.1	92.5
Brooklyn	8.3	50.4	88.7
Chicago	8.1	67.2	94 2
Cincinnati	7.2	74.5	95.4
Cleveland	8.9	63.6	93.5
Detroit	8.5	66.3	
Jersey City ...	9.3	50.9	88.9
Newark	7.8	52.5	89.0
New York....	10.9	63.0	93.4
Philadelphia..	9.7	68.4	86.2
St. Louis......	5.4	67.4	93.4
San Francisco.	9.6	61.9	76.6

The only thoroughly reliable basis for a comparison of the school attendance of different places is either the whole population or the school population between certain ages. The enrollment is not to be depended upon, because it is not kept the same way in different places. In some, it is greatly increased by including all the children enrolled in any of the schools during the year, many pupils being thus counted several times.

The following table will permit a comparison between the American and English cities in respect to school attendance:

City	Date of enrollment	Number enrolled	Per cent of attendance
Liverpool...	Feb. 1875	57,698	66.6
Leeds......	Feb. 1875	44,498	61.8
Bristol	Feb. 1875	25,182	70.7
Newcastle on Tyne	Jan. 1875	17,444	69.6
Birmingham	June 1875	51,334	67.6
Manchester..	Feb. 1875	48,275	67.1

It will be thus seen that the average attendance, as compared with the number enrolled, is better in this country than in England.

In estimating the efficiency of school systems, the period of attendance is a very important element to be considered. (See SCHOOL AGE, and SCHOOL YEAR.)

ATTENTION (from the Latin *tendere*, to strain, implying a strained effort of the mind) is perhaps the most important of the mind's activities, since the quality and duration of the intellectual impressions depend upon the degree of attention with which the faculties have been exerted in acquiring them. There is no point of difference between the trained and the untrained intellect so striking as the voluntary power of fixing the mind for a continuous period of time upon any given subject. Hence, to discipline this power becomes, in an especial manner, the office and duty of the educator. Commencing with the most rudimental exercise of the observing faculties, he passes on, step by step, to the process by which, through the entire and determined giving up, as it were, of the whole mind to the contemplation and study of any given class of facts or ideas, the student learns to evolve new truths, or analytically to explain the intricacies of abstruse problems. When the attention has become obedient to the will, this branch of mental training is complete; and, therefore, the aim of the educator should be to instill habits of controlling the attention, and rigidly preventing those of desultory, wayward application, or listlessness. This power of continuous attention is, without doubt, the most valuable result of intellectual training. To produce this result, it is of the first importance to interest the pupils, especially in the earlier stages of instruction. Young minds have an intense desire to know—not words merely, but things. They have a strong craving for new ideas, and take the deepest enjoyment in the exercise of the perceptive and conceptive faculties. Hence the importance of object-teaching. The perceptive faculties are exercised in the observation of the sensible qualities of all the different things with which the child is surrounded, or which may be presented to its view by the teacher, for the purpose of attracting its attention; and these objects should be diversified as much as possible, so as to appeal to the child's love of novelty.

The attention should not be exercised for long periods of time. When the teacher perceives that it is flagging, it is best to stop the exercise; for all that is done while the child's attention is relaxed, is worse than fruitless. It is from an inattention to this truth that children are often made incurably listless in school. They are set at exercises which awaken no interest in their minds, and, consequently, acquire ineradicable habits of superficial, careless attention. In all the subsequent studies of the pupil, it is essential that his interest be awakened as much as possible; but it will be found there is a reciprocal action of interest and attention. The pupil having acquired in the first stages, in some degree, the habit of voluntary attention, will, as a matter of duty, apply his mind to the studies prescribed for him; and this very application, if earnest and diligent, will soon excite the deepest interest in the subjects of study.

The dependence of memory upon attention is well known to all who have observed, however superficially, the operations of the mind; and the power to recall at will our mental impressions and acquisitions is perhaps directly in proportion to the attention with which the associations binding them together were formed. When these are feeble, loose, accidental, and formed with little volition, the mind will have but an imperfect control of its thoughts, and will thus be wanting in the chief quality of a sound intellectual character.

Attention requires a vigorous exercise of the brain, and, therefore, is, more or less, dependent upon the physical condition. When this has been exhausted by labor, either bodily or mental, or weakened by disease, attention is scarcely possible: and the effort to give it is injurious, because it induces still farther nervous prostration. Neither should deep attention be exerted or attempted immediately after a hearty meal. The nervous energy is then directed to the digestive functions, which active cerebration will greatly disturb. Hence, the diet of a student should be light, but nutritious. The brain should also be supplied with thoroughly oxygenated blood. No one can think well in an impure atmosphere, especially if it is contaminated by the breathing of many persons. In this way, children often suffer a serious loss of health. They are crowded in apartments too small for the number to be accommodated, and very imperfectly ventilated: and, at the same time, are expected to give close and earnest attention to the subjects of instruction. This is a physical impossibility, and the attempt to do it must always be followed by disastrous results. In no respect has the aphorism, "A sound mind in a sound body" a more forcible application than to the exercise of attention. For what contrast can be stronger than that presented by the poor wretch whom disease has bereft of every mental state but wandering thoughts or absolute vacuity, and the man of sound health and a well-trained mind, who is ready at will to concentrate all his intellectual energies upon a given subject, and to keep them steadily fixed upon it until the object of his investigations has been attained! (See INTELLECTUAL EDUCATION.)

AUGUSTANA COLLEGE was founded at Paxton, Ill., in 1863, by the Swedish Augustana Synod of the Evangelical Lutheran Church. It was removed to Rock Island, Ill., in 1875, where it has buildings, grounds, and apparatus estimated at $50,000 in value. It has a library of 7000 volumes, a faculty of seven professors and two tutors, and 110 students, of whom 92 are in the collegiate department. The chief object of this college is to afford to young men a thorough education at the lowest possible rates (about $100 per annum for tuition, board, and room), and also to prepare young men for the theological seminary connected with it, and for teaching in the parochial schools of the Swedish Lutheran congregations. The Rev. T. N. Hasselquist, D.D., is the president. (1876.)

AUGUSTINE, Saint (Lat. *Aurelius Augustinus*), a celebrated doctor of the Latin church, and one of the greatest of Christian teachers and theologians, was born Nov. 13., 354, at Tagaste, in Numidia, the modern Algeria. His father, Patricius, was a pagan; his mother, Monica, a fervid christian. He was sent by his father to the famous school of Madaura, and after the death of his father continued his studies at Carthage. His life at this time was very licentious; but he never forgot the pious instructions which his mother had given him, nor the devotional exercises to which she had accustomed him. Dissatisfied with the religious systems of the ancient Greeks and Romans, as well as with the Jewish and Christian scriptures, he tried to find rest for his mind in the Manichean system. At Rome, to which he went at the age of 29, he achieved great reputation as a teacher of eloquence. Six months later, he was called to Milan as a teacher of rhetoric. His intercourse with Saint Ambrose, who was then bishop of Milan, and the incessant entreaties of his mother, shook his faith in Manicheism, and, in 387, brought about his conversion to Christianity. He became at once one of the most prominent writers of the Christian church; and after spending three years in seclusion at his birthplace Tagaste, he was obliged, in compliance with the demand of the people of the neighboring town of Hippo, to take orders, so that he might assist bishop Valerius in his failing age. After the death of Valerius, in 395, he was elected his successor, and continued bishop of Hippo till his death, in 430. His reputation as a theological writer, soon filled the entire church, and his influence upon theological doctrine and upon the theological schools of the Christian world proved to be greater than that of any one who had preceded him.

The most famous of all the numerous works of Augustine, the *Confessions*, has also a great educational interest, as it contains the reflections of one of the most distinguished scholars of the Christian church on his own education. He demonstrates, in the clearest light, the strong and imperishable influence of maternal education upon the whole after life of man; and from his touching account of the fierce conflict between the highest intellectual and philosophical aspirations on the one hand, and moral weakness on the other, many prominent teachers have professed to have learned more than from the study of many theories of education.—Augustine followed Tertullian in advocating a rigid exclusion of pagan authors from the education of young Christians. Especially did he oppose the reading of the "impious fables of the poets, the polished lies of the rhetoricians, and the verbose subtleties of the philosophers;" but the reading of the historians he did not absolutely object to. This question as to the use of pagan classics in Christian schools has continued to be a lively controversy in the Christian church; and, even in the nineteenth century, the views of Tertullian and Augustine have found many defenders. (See CHRISTIAN CLASSICS.)

By the establishment of a training institution for candidates for the priesthood, Augustine laid the foundation of episcopal seminaries, and gave a powerful impulse to the diffusion of theological science among the clergy. He refused to ordain any one as a priest who had not been educated in his seminary. A number of his pupils established similar institutions in their dioceses; and, when the church of North Africa was devastated by the incursions of the Vandals, the African bishops established seminaries in many of the places where they found a refuge. — By his work *De catechizandis rudibus*, Augustine became the father of Christian catechetics. The work was compiled in compliance with the application of a deacon of Carthage, by the name of Deogratias, who wished to have a guide-book for the instruction of the catechumens. In this work, Augustine demands for the instruction of the catechumens a historical basis, regarding an outline of Bible history as the best compendium of the knowledge that is necessary for salvation. Of the other writings of Augustine, the work *De musica*, a dialogue between a teacher and a scholar, and *De magistro*, which treats of Christ as the best teacher, are partly of an educational character. — See SCHMIDT, *Geschichte der Pädagogik*, II, 59, sq.; BINDEMANN, *Der heil. Augustinus*, (2 vols., 1844—1855); POUJOULAT, *Vie de St. Augustin*; MOSHEIM, *Ecclesiastical History*, vol. I.; *The works of St. Augustine*, edited by M. DODS (London, 1874—6). Of the earlier editions of his works, that by the Benedictines, in 11 vols. (Paris, 1679—1700) is considered the best.

AUSTIN COLLEGE, at Huntsville, Texas, was founded in 1849, by Presbyterians. Its grounds, buildings, and apparatus are valued at $60,000. It has a library of 3000 volumes, and a preparatory and classical department. The number of students is about 90. The Rev. S. M. Luckett, A. M., is the president. The annual tuition fee is from $30 to $50.

AUSTRALASIAN COLONIES. This name is now commonly used to designate the English colonies on the continent of Australia, as well as the neighboring islands of Tasmania and New Zealand. The following exhibits the area and population of each of these colonies:

	New South Wales	308,560	sq. m.	584,278	inhab.
	Victoria	88,451	"	807,756	"
	South Australia	380,602	"	204,883	"
	Queensland	668,259	"	160,000	"
	West Australia	975,824	"	26,209	"
	Northern Territory	526,531	"	200	"
	Tasmania	26,215	"	105,000	"
	New Zealand	106,259	"	299,500	"
	Total	3,077,701	sq. m.	2,187,826	inhab.
Natives	Australia			55,000	"
	New Zealand			45,500	"
	Grand Total			2,288,326	inhab.

The progress of most of these colonies, especially that of New South Wales, Victoria, and South Australia, has been very rapid; and it may be safely inferred from their vast resources, as well as from their rapid progress in the past, that these colonies will, ere long, hold a prominent place among the civilized countries of the world. Their national language is the English. There is no state church as in England, but the Episcopalians form the dominant body as regards number. Next to these are the Roman Catholics, who constitute about 25 per cent of the total population. The Methodists rank third. All other denominations are well represented.

As the colonies are independent of each other, each has its own educational system, which, however, in all the colonies is more or less assimilated to the educational law of England or the national system of Ireland. At the head of the system, is a board or council of education, consisting of members appointed by the government. The government establishes schools to be entirely supported and controlled by the state, but also grants aid to schools established by other parties, in case they submit to certain regulations. In several of the colonies, education has been made compulsory. With regard to grade, the schools consist of primary schools, grammar schools, colleges, and universities. Of the latter, two have been in operation for some time,— those at Sydney and Melbourne, the former in 1874 with 45 students, the latter with 122. A third university was more recently established at Dunedin, New Zealand, and a fourth, in 1875, at Adelaide. A monthly periodical, devoted to education, is published in Sydney.

The Australian *Handbook and Almanac* for 1876 gives the following educational facts and statistics for the several countries:

New South Wales.—The number of schools is returned at 1508, with 2,334 teachers of both sexes. and 110,287 scholars, of whom 57,917 are boys, and 52,370 girls. Under the council of education, there were 942 schools, employing 877 male and 512 female teachers, with 92,303 scholars of both sexes. These schools are particularized as public schools, provisional schools. and half-time schools. The denominational schools under the board number 209, of which 96 belong to the church of England, 87 to the Roman Catholics, 15 to the Presbyterians, 10 to the Wesleyans, and 1 to the Jews. There are also under the control of the board 2 orphan and 3 industrial schools. The private schools of the colony number 555, of which 55 are for boys, 87 for girls, and 413 mixed. St. Paul's College had 12 students, St. John's College 4, the Grammar School 293, the Deaf and Dumb Institution 53. Toward the support of these educational institutions. the sum of £154,220 was contributed by the government, and £67,377 was received in shape of fees and voluntary contributions. The number of sunday schools was 1,023, with an average attendance of 51,478, and 6,497 teachers.

Victoria. — Of day schools, including state schools, private educational establishments, colleges, and grammar schools, there were, March, 31., 1873, 1936, with an attendance of 160,743 scholars and 4,257 teachers. The common schools numbered 1,048, with 2,416 teachers, 73,826 boys, and 62,136 girls. The local receipts for the maintenance of the schools, arising from fees and other sources. were £117,868, this amount being supplemented by a government grant of £182,202, making a total of £300,070. The private schools numbered 881, with 11,024 male and 13,595 female scholars, and 528 male and 1236 female teachers. The number of grammar schools and colleges was 7, of which 2 were Episcopalian, 3 Presbyterian, 1 Methodist, and 1 Roman Catholic. The total number of masters in these colleges and grammar schools was 77, the total number of students 1,162. Under the new educational act, the instruction in the state schools is free, secular, and compulsory. The governing power is in the hands of a minister of education, assisted by a secretary. Each school is under periodical inspection. The teachers are required to pass an examination, and are paid by fixed salaries; but they also receive the fees of the scholars, and have a further allowance according to the progress made by the scholars under their charge. The number of Sunday-schools was 1,381; Episcopalian 262, Presbyterian 308, Wesleyan 324, Primitive Methodist 73, Congregationalist 54, Baptist 59, Roman Catholic 171; with 111,540 scholars and 11,815 teachers.

South Australia. — The central board of Education consists of 7 members; the officers are 3 inspectors and a secretary. The number of licensed schools open at the close of 1874 was 320, with 17,426 enrolled pupils, and 315 teachers.

West Australia. — The legislative council in 1870 passed an education act, based upon the principle of Foster's act, now in operation in England. Schools are divided into elementary and assisted schools. The former are maintained wholly at the cost of the colony, the latter are private, but may receive a capitation grant on submitting to government inspection for secular results, and to the observance of a strict conscience clause during the four hours of secular instruction enjoined by the Act. The elementary schools are under the control and supervision of a central board appointed by the governor, and the local district boards elected by the electors. Attendance at school may be enforced by the local boards. In the elementary schools, one hour a day is devoted, under the provisions of a conscience clause, to reading the Bible or other religious books approved by the board; but no catechism or religious formulary of any kind can be used; and the Bible must be read, if at all, without note or comment. In 1874, the number of national and assisted schools was 85, with an average attendance of over 3,000. There is a Church of England collegiate school in Perth, under the patronage of the bishop.

Queensland. — Education is free. The property of the schools, and the land granted for school purposes, are vested in a board of education. Aid is granted to schools not established by the board, on complying with certain regulations. The state also assists in the establishment of grammar schools, whenever a district raises a sum for this purpose by subscription. In 1874, there were 203 primary schools, with 590 teachers, and 29,012 scholars. There were also 62 private schools, with 118 teachers and 2,123 scholars. The parliamentary appropriation for educational purposes in 1874 was £72,000, the local subscriptions were £3,116. The property vested in the board was valued at £83,358.

Tasmania. — The educational system is under the management of a council, and the attendance of children at school is compulsory. The number of schools supported by the government was, in 1874, 147, average attendance 7,970, scholars enrolled 12,158, teachers 108 male and 116 female, besides 39 pupil teachers and paid monitors. There are four schools of a higher grade. The number of sunday schools is 112, with 1,112 teachers and 10,011 scholars.

In *New Zealand*, each province has its own laws and regulations. To both national and denominational schools, in some cases, state aid is given; in others, it is limited to national schools. Dunedin has a university. In 1871, out of children from 5 to 15 years of age, 59 in every hundred could read and write, and 72 were attending school. The increase in attendance from 1872 to 1874 was very large. The number of common schools, in 1874, was 494, of colleges and grammar schools 4, and of private schools 182; total 680, having an attendance of 41,027 scholars, of whom 21,774 were males, and 19,253 females. Of the entire attendance, 33,790 belonged to the common schools; 498, to the colleges and grammar schools; and 6,739, to private schools. Besides these, there were 47 native schools, with 68 teachers and 1,244 scholars.

AUSTRIA (Germ. *Oesterreich* or *Oestreich*, eastern empire), officially designated since 1868 as the *Austro-Hungarian Monarchy*, has an area of 240,381 sq. m., and a population, according to the last census, in 1869, of 35,904,435. The empire now consists of two main divisions, Austria proper and Hungary, each of which has the legislative and administrative control of its own educational affairs. In this article we shall treat only of Austria proper, called also *Cisleithania*, because the small river Leitha constitutes part of the frontier between it and Hungary. For the rest, see HUNGARY.

Austria proper, or *Cisleithania*, consists of 14 provinces with an aggregate area of 115,925 sq. m., and a population numbering, according to the census of 1869, 20,217,531, and estimated at the close of 1874 at 21,169,341. The provinces formerly were either independent, or belonged to different states, and they still are inhabited by people of various nationalities. An official census of the nationalities has not been taken since 1850; but their comparative strength is well known, and the estimates made by writers on this subject substantially agree. The Germans number about 7,109,000, or 35,16 per cent; the Czechs and Slovacks, 4,719,000, or 23,34 per cent; the Poles, 2,444,000, or 12,09 per cent; the Ruthenians, 2,585,000, or 12,80 per cent; the Slovens or Winds, 1,196,200, or 5,92 per cent; the Croats or Serbs, 522,400, or 2,58 per cent; the Magyars, 17,700, or 0,09 per cent; the Italians, 588,000, or 2,91 per cent; the Roumanians, 207,900, or 1,02 per cent; the Jews, 820,000, or 4,05 per cent. Two of the provinces, Upper Austria and Salzburg, are wholly German; besides, the Germans have a majority in Lower Austria (90 per cent), Carinthia (69 per cent), the Tyrol (60 per cent), Styria (63 per cent), and Silesia (51 per cent). The Czechs control two provinces, Moravia (71 per cent) and Bohemia (60 per cent); the Slovens one, Carniola (93 per cent); and the Croats or Serbs one, Dalmatia (87 per cent). In four provinces, no one nationality has an absolute majority; in Galicia, the Ruthenians number 44 per cent, and the Poles 42; in the Bukovina, the Ruthenians 40, and the Roumanians 39; in the Littorale, the Slovens 42, the Italians 31, and the Croats 21.

A greater harmony than in regard to the nationality of the inhabitants, prevails in respect to their religion. The Roman Catholics, in 1869, constituted 91,92 per cent of the total population; the Jews 4,06 per cent, the Orthodox Greeks 2,27, the Lutherans 1,22, the Reformed 0,51, all others 0,02 per cent. Included in the number of Roman Catholics are the United Greeks (11,53 per cent) and the United Armenians (0,02 per cent). The Roman Catholic Church is in the majority in every province, except the Bukovina, and in every nationality, except the Roumanian.

Until the government of Maria Theresa, public education was in a very backward state. As late as 1770, thirty years after the accession of the empress to the throne, only 24 per cent of the children from the 5th to the 13th year of age attended the public schools of Austria; in Lower Austria, only 16 per cent; in Silesia, only 4 per cent. The large majority of the children, especially in the country, grew up without any instruction. The first impulse to the thorough organization of a public school system was given by a memorial which the bishop of Passau, Count Firmian, addressed to the empress. In accordance with his suggestions, the council of state proposed the establishment of two permanent school committees for the provinces of Upper and Lower Austria for the purpose of improving the methods of teaching and the administration of the schools. The government approved the plan, and the first committee was established May 19., 1770. One of the first acts of the committee was the establishment of a model school at Vienna, in January, 1771, and of a model school fund. The influence of these reforms was so satisfactory, that the establishment of school committees, school funds, and model schools in all the other provinces, was either carried into effect, or at least begun. The establishment of a court committee on studies (*Studienhofcommission*), February 12., 1774, which was to have the chief control of all the educational affairs of the empire, was another reform of great importance. In December, 1774, the first comprehensive school law was published. It provided for the establishment, in connection with every parish church, of a common (*trivial*) school, in which religion, Bible history, reading, writing, and the elements of arithmetic, should be taught; for the establishment in each circle of at least one principal-school (*Hauptschule*), with three or four teachers, who should give instruction in the Latin language, geography, history, composition, drawing, geometry, and the elements of agriculture; and for the establishment, at the seat of each school committee, of a model and normal school, which, besides extending the course of instruction pursued in the principal-school, was also to prepare candidates for the office of teacher. Attendance at school was made obligatory after the 6th year of age, and penalties were imposed upon parents and guardians who should fail to send their children to school. All teachers were bound to use the text-books which the government caused to be specially prepared for the Austrian schools. The school law was chiefly the work of Abbot Felbiger, who in connection with Kindermann and other distinguished educators, worked indefatigably to carry into effect the provisions of the law. The emperor Joseph II. regarded the diffusion of education as the soundest basis of his reformatory schemes. He enforced by compulsory laws the education of all children from 6 to 12 years of age; and, in 1781, ordered a general school census to be taken. The patrons of the churches were required to provide for the establishment of a school in connection with every church which was without one. The patent of toleration of Oct. 13., 1781, gave also to the Protestants of the Augsburg and Helvetic confessions, and to the non-united Greeks, the right to establish a church and school for every 500 persons. The Jews, also, were at first authorized, but soon afterward commanded, to establish schools for the education of their youth. Great prominence was given, even in provinces not German, to the teaching of the German language, the knowledge of which was an indispensable qualification for an appointment to any state office. Instruction in singing, mechanical work, and horticulture was recommended. Corporal punishment was limited to extreme cases. A review course of instruction (*Wiederholungsunterricht*) was to be provided on Sundays and holidays for children who had finished the course of the elementary schools. In the capital of each of the circles into which the Austrian provinces were divided, school commissioners were appointed to superintend the public schools in common with the deans. During the reign of the emperor Leopold, teachers' associations were organized, and delegates chosen by these associations were admitted to the provincial boards of education. A revisory committee on studies (*Studienrevisionscommission*), which was formed in 1795, under the emperor Francis, prepared a new constitution for the public schools, which was published in 1805, and formed for a long time the legal basis for public education in Austria. The influence of teachers and teachers' associations on the government of the schools was greatly restricted; while, on the other hand, that of the Catholic Church was greatly extended, the inspection and superintendence of schools being almost wholly transferred to the parish priests and the bishop. The organization of the review course of instruction, a peculiar feature of the Austrian system, was completed in 1816 by a special law, which made attendance at the review course of instruction compulsory until the close of the 15th year of age or the end of apprenticeship. In 1828, the government began to publish statistical accounts of the progress of public education, which, as appears from these accounts, continued to be steady in all the provinces of the empire. A peculiar feature in the educational history of Austria, at that time, was the more general introduction of the vernacular languages of the various nationalities into the public schools, in place of the German, which thus far had been too predominantly used even in some districts not German. Among the first results of the revolution of 1848, which led to the abdication of the emperor Ferdinand I., and the accession of the emperor Francis Joseph I., was the establishment of a ministry of public instruction, which in the same year published an outline of the proposed re-organization of all the Austrian schools. This outline established several important principles: (1) The maintenance of a public school was made obligatory for the communities; (2) Instruction was every-where to be given in the mother-tongue of the pupils; and (3) For the candidates of teachers who formerly had received only a six months' instruction, a special course of two or three years was arranged, which was gradually to be developed into a teachers' seminary. In 1849, Count Leo Thun was appointed minister of public instruction, who, during the eleven years of his administration, carried into effect some of the reforms proposed in the outline, and organized in the capital of every province a provincial school board, consisting partly of experienced educators who received the title of school councilor (*Schulrath*), and partly of administrative officers. But the chief aim of this minister was the establishment of a far-reaching control of the Catholic Church over the public school system. The concordat between Austria and the Pope, which was concluded in August, 1855, provides that the entire instruction of the Catholic youth, both in public and private schools, must be in accordance with the Catholic religion; that all the teachers in the Catholic schools are placed under the superintendence of the church, and that the bishops will propose to the government fit persons for the office of school superintendents. The disastrous issue of the war against France and Italy led to the introduction of several sweeping reforms, and the establishment of a national representation, or *Reichsrath*, in which the Liberal party impetuously demanded the emancipation of the public schools from the control of the church, and the abolition of the concordat. The ministry of instruction, which was looked upon by the Liberals as a tool of the church was totally abolished; but the government showed great reluctance in yielding to other demands of the Liberals. A new organization of the public school system was provided for by the law of May 14., 1869. It substitutes for the former *Haupt- und Trivialschulen* (high and common schools) a division into *Volksschulen* (people's schools) and *Bürgerschulen* (citizens' schools). The subjects to be taught in the former are religion, language, arithmetic, writing, geometrical forms, the elements of natural science and history, singing, and gymnastic exercises. According to the number of teachers allowed, it may have from one to seven classes. In the *Bürgerschule*, moreover, composition, natural science, geometry, book-keeping, and drawing are taught. Schools of the latter class have, when complete, 8 classes, or if connected with a *Volksschule* of 5 classes, only 3 classes. The communities must establish a school whenever, in the circuit of one hour's walk, 40 children are found who attend a school at least half a German mile distant. A second teacher is allowed when the number of children exceeds 80; and another for every additional 80. The school age lasts from the 6th to the 14th year. There are special school boards for the communities, districts, and provinces. The number of *Bürgerschulen* and *Volksschulen* in 1871, was 14,769, of which 6560 were German, 5746 Slavic, 1080 Italian, 24 Roumanic, 5 Magyar, 3 Greek, and 1352 mixed. The number of male teachers was 20,904; of female teachers, 3,445. The attendance at school was 941,497 boys and 878,193 girls. In two provinces, the Tyrol and Moravia, the number of children attending school exceeded that of the children of school age; in Upper Austria, Bohemia, and Silesia, it was between 90 and 96 per cent.; in Lower Austria, Salzburg, Styria, and Carinthia, between 75 and 95; in Carniola and the Littorale, between 50 and 55; in Galicia, 20; in Dalmatia, 15; and in the Bukovina, only 12 per cent. The middle schools, which prepare boys for the higher studies, are either *gymnasia*, *realschools*, or *realgymnasia*. The gymnasia prepare their pupils for the universities, the realschools for the higher technical schools, and the realgymnasia for both. In 1870, there were 97 gymnasia with 27,287 pupils, 24 realgymnasia with 3,210, and 50 realschools with 13,229 pupils. Of universities there are 7: those of Vienna, Gratz, Innspruck, Prague, Cracow, Lemberg, and Czernowitz. They all contain, like the German universities, 4 faculties, except Lemberg and Czernowitz, which have only 3. The number of students, in the winter semester of 1874—5, was, at Vienna 4,223, at Gratz 930, at Innspruck 633, at Prague 2,011, at Lemberg upwards of 1100, and at Cracow upwards of 1,000. There are seven technical high schools: 2 at Prague (1 German and 1 Czechic), and 1 each at Vienna, Gratz, Brünn, Lemberg, Cracow, and, in all, about 270 professors and 3,000 pupils. Male teachers' seminaries were first established in accordance with the new law of 1869, in 1870. Of these, there were, in 1873, 40, with 145 principal and 207 assistant teachers, and 2,111 pupils, of whom 1,093 were Germans, 530 Czechs, 215 Poles, 93 Ruthenians, 128 Croats or Servians, 95 Italians, and 15 Roumanians. For the education of female teachers, there are 21 seminaries, with 105 principal and 111 assistant teachers, and 1,667 pupils. The number of special schools is very large, embracing theological, medical, and industrial schools, schools for navigation, mining, agriculture, forestry, and the fine arts, together with military institutions, institutions for the deaf and dumb, and the blind, orphan asylums, infant institutions (*crèches*).

The most important educational periodicals are *Der Oesterreichische Schulbote* (since 1851) and *Zeitschrift für östreichische Gymnasien* (since 1850).

A full account of the history and statistics of public education in Austria is given by Dr. Ficker, in SCHMID's *Pädagog. Encyclopädie*, vol. v. p. 242—566. See also HELFERT, *System der östreich. Volksschule* (Prague, 1861), a collection of all the laws relating to the public school system; SCHIMMER, *Statistik der Lehranstalten des östreich. Kaiserstaates von* 1851—1857, (Vienna, 1858). The latest official statistics are annually published in the *Statistische Jahrbuch*, by the central statistical commission of Vienna.

AUTHORITY (Lat. *auctoritas*), the right to command, or the persons or body by whom the right is exercised; sometimes also, in matters pertaining to the intellect, the power to influence or exact belief. In education, the term has especially this twofold application: (1) to the discipline, or management of children; (2) to their instruction. The primary authority, both in respect to time and importance, to which the child is subjected is that of the parent; and for several years no other can be exercised over it, except *in loco parentis*. It is true, the state extends a protecting care over the child; but only by an exercise of its authority over the parents, requiring them to perform their proper duties as the natural guardians of their children. When the parents neglect or repudiate these duties or are guilty of acts in contravention of them, the state interposes its authority, but not even then directly, upon the child, but only to place it under the authority of those who will better care for its interests, and perform for it the natural duties of its parents. The right exercise of parental authority is, therefore, one of the most important elements in the education of the child. (See HOME EDUCATION.) If the child from its earliest years has been accustomed to recognize and submit to the authority of its parents, firmly but judiciously exercised, there will be, ordinarily, but little difficulty, on the part of the teacher, in making his authority effective. The child, on entering the school, feels for the first time that it is under an authority different from that of its parents, to which it has previously learned to submit with unquestioning obedience. Its first impulse is, perhaps, to refuse submission to this new authority; and the influence of the teacher over the child will greatly depend upon the manner in which obedience is enforced. (See DISCIPLINE.) In the authority of the teacher, as well as in that of the parents, two elements are combined,—one that attracts and encourages, and one that curbs and subdues. Without the former, authority is arbitrary and violent; without the latter, it is feeble and often powerless. In other words, the authority that truly educates should be founded not alone upon fear, but upon love and esteem as well. The authority of the teacher is not, like that of the parents, based upon a natural law, but is delegated either by the parents or by those who stand in the parental relation to the child. This is what is meant when it is said that the teacher is *in loco parentis*; not that he has exactly the authority of the parent, but only so far as it is not limited by the general usages of society, or by special contracts. The conscientious teacher cannot, for a moment, doubt that it is his duty strictly to observe these limits; since, by willfully overstepping them, he must either break a contract, or violate a most sacred trust; and, in either case, his authority will be either weakened or destroyed.

When schools are controlled by boards of education or boards of trustees, such constituted authorities stand to the children in place of the parents, in respect to school education; and the teachers become simply the agents of the school board, and can only exercise an authority limited by the rules of such board. The limits of the authority delegated to teachers by the appointing power, vary considerably in different places, some school boards reserving to themselves certain powers or functions which others confer upon the teacher. It is a matter of the utmost importance that all persons concerned in the education of the child should co-operate harmoniously; since nothing tends so much to weaken the force of authority in the mind of the child as to notice a conflict among those under whose control it is placed. Father and mother, parent and teacher, teacher and school board, should, at any rate, as far as the child is aware, agree absolutely; since the less children know of any difference of opinion between their custodians, the more cheerfully will they respect and submit to the principle of authority in general.

Many cases will arise, both in the family and in the school, in which children will refuse submission to the authority of their educators; and hence the mode of enforcing authority becomes a matter of serious importance. Authority, of course, implies a control of the will of those over whom it is exercised; and the means by which this is to be obtained will differ according to the disposition and habits of the child, and, to a considerable extent, also according to the character of the educator himself. A violent, irascible, morose, or capricious parent or teacher will have a constant conflict with the child, and will never be able to establish his authority, to whatever extent, for the time being, he may compel a seeming obedience. Authority is thus described by an eminent teacher:—"It is not mere legal form, nor the instrumentalities for executing it, that constitutes authority. It is a power in the individual himself, independent of all circumstances, and rising in its own majesty above all mere conventionalities. It is a power difficult to describe, but which sends out its streams of influence along the teacher's pathway. It exists in the man, demanding, securing, and retaining cheerful obedience." Authority should not be exercised as such;

"the right-feeling parent," says Herbert Spencer, "like the philanthropic legislator, will not rejoice in coercion, but will rejoice in dispensing with coercion." (See MORAL EDUCATION.) In this connection, arises the question of the propriety of corporal punishment to enforce authority in the family or school. All educators are agreed, that the use of physical force, if at all sanctioned, should be only, as a *dernier ressort*, brought in when every other means of coercion has failed; some, however, condemn the "use of the rod" utterly. Locke assents to it only in cases of extreme obstinacy. "The teacher," says D. P. Page, "has the right to establish authority by corporal infliction; and thus to save the school and also save himself. . . . . It is his duty to establish authority, peaceably, indeed, if he may,—forcibly if he must." (See CORPORAL PUNISHMENT.) In the exercise of authority, both parent and teacher should faithfully consider the influence they are exerting over the future character of the child. As Locke says, "Every man must some time or other be trusted to himself and his own conduct; and that he is a good, a virtuous, and able man, must be made so within." In the family and school, as in the great world beyond, authority should, as far as possible, be exercised without being felt. Richter justly remarks, "The best rule in politics is said to be '*pas trop gouverner*'; it is also true in education."

The principle of authority has an important application to the mental as well as the moral education of children. In the earliest stages of intellectual instruction, the child must receive most of the information imparted to it on the authority of its teacher; but modern principles and methods require that, even from the first, as far as possible, the child should learn for itself by the exercise of its perceptive and conceptive faculties, and not merely on the authority of its teachers. Much, however, must be imparted, that is beyond the scope of the child's understanding and experience; and, consequently, there will be a wide range for the operation of the teacher's authority. It will, of course, be greater or less in proportion to his personal influence in other respects, and particularly in proportion to the confidence felt by his pupils in his wisdom and attainments. In some instances, as exemplified in the history of religious orders and creeds and of the schools of philosophy and science, the authority of eminent teachers has often been so great as to exert an influence for many centuries over thousands, or even millions, of intellects. Such was the intellectual authority of Pythagoras, Plato, Aristotle, and other leaders of ancient schools of philosophy. Teaching too much by authority, and failing to appeal sufficiently to the reason and judgment of the pupil is an error to be carefully avoided; since it must exert a disastrous influence upon the student's habits of thought and acquisition. With all due deference to the philosopher of Samos, who was content to have his disciples depend upon the *Ipse dixit Pythagoras*, his example cannot be wisely imitated by the teachers of our time. Every one must learn to form his own opinions, carefully, dispassionately, after due investigation, and a proper consideration for the conclusions and experience of other minds; but still they must be his own. The teacher should infuse into the minds of his pupils an intellectual independence, — not a skeptical questioning of every-thing, but a thoughtful investigation of the *why* and the *wherefore*, a diligent balancing of the weight of testimony, and a habit of inquiring into the ultimate reasons of things, as far as they can be adduced. This will impart concentrativeness and activity of mind, and call into exercise the judgment and reflection upon whatever is presented to the attention, whether in study, reading, or conversation. The pupil thus instructed would soon realize the force and beauty of that fine sentiment of Emerson: "I had better never see a book than be warped by its attraction clean out of my own orbit, and made a satellite instead of a system." Montaigne strongly condemned the prevalent mode of teaching by authority. "Let the tutor," says he, "make his pupil examine and thoroughly sift every thing he reads, and lodge nothing in his head upon simple authority and upon trust . . . . Let him know that he does know." Rousseau also severely criticised the pedagogy of his time, for basing the science of education on the principle of authority. He demanded that the pupil should not know any thing merely because it was told him by the teacher, but because he understood it. He should not learn the science, but discover it. "If," said he, "you give him an authority instead of a reason, he will never think independently, but will always be the foot-ball of the opinions of others." This is an extreme view, as every teacher of experience must know. The authority of the teacher cannot be eliminated in intellectual education; since to do so would put the undeveloped understanding of the pupil on an equality with the mature and developed intellect of the instructor; neither can its just limits be definitely fixed. The disposition to accept the statements of the teacher as truths, when not fully understood, should be cultivated. Modesty is often as requisite and as becoming in thought as in morals. The great principle to be kept in view—and it is to the credit of Rousseau that he so clearly perceived, and so emphatically enunciated it—is, that authority should not have its aim within itself, but that its object should be to develop the faculties of the pupil, so that he may fully understand as true and right, what he has received on the authority of the teacher. — See MONTAIGNE, *Essais* (Cotton's translation, edited by W. Hazlitt); LOCKE, *Thoughts concerning Education;* ROUSSEAU, *Émile ou de l'Éducation;* HERBERT SPENCER, *Education: Intellectual, Moral, and Physical.*

BACCHANTS (Lat. *Bacchantes*) is a term applied in mediæval times to those university students who had not yet finished their first year's studies, and being taxed for drinking purposes by the older students, were thus drawn into revels and debauchery. Later, this name was given to those idle, dissolute students who traveled about the country, collecting money, ostensibly to enable them to pursue their studies. Sometimes they were accompanied by pupils, whom they compelled to steal and beg for them. (See A B C-Shooters.) So numerous were these itinerant scholars, that organizations of them existed with constitutions and rituals; and sometimes these bodies were supplied with board and lodging by the cities in which they located themselves. These practices ceased almost entirely with the Reformation, but we find traces of them in Germany and England down almost to the present century. Burkard Lingg and Thomas Platen were Bacchants, whose autobiographies in German are still extant.

BACHELOR (Lat. *Baccalaureus*), a term applied to one who has reached a certain grade in a college or university education; as, *Bachelor of Arts* (A. B., or B. A.), *Bachelor of Civil Law* (B. C. L.), *Bachelor of Divinity* (B. D.), etc. The word as thus used is of uncertain etymology. It was introduced into the University of Paris by Pope Gregory IX., in the 13th century, and applied as a title to those students who had passed certain preliminary examinations, but were not prepared for admission into the rank of master, teacher, or doctor. Afterwards, it was adopted by other European universities, to indicate the lowest academical honor, as it is now used both in this country and in Europe. (See Arts, and Degrees.)

BACON, Francis, Viscount St. Albans and Baron Verulam, one of the most illustrious of English philosophers, was born in London, Jan. 22., 1561, and died April 9., 1626. Little is known of his early education, but from the social position of his father, Sir Nicholas Bacon, he must have enjoyed the advantages of the best instruction that could have been obtained. He was matriculated at Trinity College, Cambridge, in 1573; and, after going abroad for a time, he returned and commenced the study of the law in 1580. He was soon called to the bar, and in 1590, his reputation was so great, that he was made "counsel extraordinary" to Queen Elizabeth. He afterwards served in parliament, when he showed so much spirit, that on receiving the royal rebuke for a certain speech, which he had delivered, he nobly replied, that "he spoke in discharge of his conscience, and his duty to God, to the queen, and his country." As an orator, he was much commended by his contemporaries. Ben Jonson said that while he was speaking, "the fear of every man that heard him was lest he should make an end." The earl of Essex had been his friend and benefactor; but when that rash and unfortunate nobleman was under trial, Bacon, evidently from fear of the queen's displeasure, spoke severely against him, and was instrumental in securing his conviction. This has subjected him to much obloquy, as being guilty of meanness and ingratitude. After the accession of James I., Bacon rose rapidly in the royal favor; his professional practice became very large and lucrative, besides which he held the office of attorney general which yielded him £6,000 per annum. In 1616, he was made lord high chancellor, and, besides, received the title of Baron Verulam; and, in 1621, he obtained the additional title of Viscount St. Albans. At this time, he stood upon the highest pinnacle of political preferment and literary fame; for he had just published his greatest work, the *Novum Organum*. From this lofty position he suddenly fell, accused and condemned of taking bribes from those whose cases were before his court. His own words to the House of Lords, when the facts had been disclosed by an investigation, were, "I do plainly and ingenuously confess that I am guilty of corruption, and do renounce all defense, and put myself upon the grace and mercy of your lordships." He was, accordingly, sentenced to pay a fine of £40,000, and to suffer imprisonment in the Tower during the king's pleasure (1621). He was, however, released from confinement in two days, and the fine was subsequently remitted. He never regained the position he had so disgracefully lost, but spent the few remaining years of his life in a studious and literary retirement. Between the career of Bacon as a politician and his career as a philosopher there is a marked contrast. "Had his life," says Macaulay, "been passed in literary retirement, he would, in all probability, have deserved to be considered, not only as a great philosopher, but as a worthy and good-natured member of society. But neither his principles nor his spirit were such as could be trusted, when strong temptations were to be resisted, and serious dangers to be braved." His desire to keep up a grand establishment, to make a brilliant figure in society by the princely character of his entertainments, his equipage, and all the other fascinations of luxury, caused expenditures far beyond his means, which he endeavored to meet by unlawful gains. His philosophical views were in one sense entirely consistent with his character. They were practical; they aimed to make science minister to the worldly wants of mankind. The scholastic learning of the universities which he had inveighed against shortly after leaving Cambridge, was, he perceived, nothing but antiquated, profitless word-learning. He wished to incite to the discovery of new truth, that it might "mix like a living spring with the stagnant waters." "Two words," says Macaulay, "form the key of the Baconian doctrine — utility and progress. The ancient philosophy disdained to be useful, and was content to be stationary. It dealt largely in theories of moral perfection, which were so sublime that they never could be more than theories; in attempts to solve insoluble enigmas; in exhortations to the attainment of unattainable frames of mind. It could not condescend to the humble office of ministering to the comfort of human beings." Bacon held that all knowledge must be obtained by a careful and unprejudiced induction from facts. Hence the importance of experiment; for without experiment man may indeed stumble on the discovery of truth, but by experiment inventions are made. "Bacon," says Kuno Fischer, "is the philosopher, not simply of experience, but of invention. His only endeavor is philosophically to comprehend and fortify the inventive spirit of man. From this point alone is his opposition to antiquity to be explained." Bacon's career commenced at a time when a great intellectual revolution was already in progress. The Aristotelian philosophy so called, which was indeed a perversion of Aristotle's teachings, and the senseless attempt to employ the syllogism as an instrument of discovery, had already disgusted a large number of active minds, as being utterly barren of fruit. As Macaulay remarks, "Before the birth of Bacon, the empire of the scholastic philosophy had been shaken to its foundation. Antiquity, prescription, the sound of great names had ceased to awe mankind." Bacon's mind was so constituted as to sympathize at once with this changed condition of things; and throwing the weight of his vast intellect against the already tottering fabric, he precipitated its fall. As Aristotle analyzed the method of deductive reasoning, so Bacon explained the principles and method of induction, proving it to be the great instrument, or *organon,* for the discovery of truth and the improvement of the condition of humanity. The full title of his great work is *Novum Organum, sive Indicia Vera de Interpretatione Naturæ et Regno Hominis.* (*The New Organon, or True Directions concerning the Interpretation of Nature and the Kingdom of Man.*) The key to the whole philosophy is contained in the first of the aphorisms of which it is composed: "Man, being the servant and interpreter of nature, can do and understand so much, and so much only, as he has observed, in fact or in thought, of the course of nature; beyond this he neither knows any thing nor can do any thing." Previous to the publication of this work, he had published *The Advancement of Learning* (1605), which was the germ of *De Augmentis Scientiarum,* published in 1623. These and other works, published or proposed by him, were to constitute an *Instauratio Magna*—a grand re-establishment not only of the true method of scientific investigation but of science itself, in all its varied departments. Modern discovery and invention are to a great extent the offspring of this splendid gift of human genius. Bacon's most popular work was the *Essays,* originally published in 1597, but afterwards enlarged and improved. Dugald Stewart has said of this work, "It may be read from beginning to end in a few hours, and yet after the twentieth reading, one seldom fails to remark in it something overlooked before." In his essay on *Education,* Bacon refers all its efficacy to custom, or habit: "Certainly custom is most perfect when it beginneth in young years: this we call education; which is, in effect, but an early custom." But Bacon's contribution to education does not consist in any particular precepts concerning it or any special treatment of that subject; but in the general effect of his philosophical views, in setting free the human mind from errors and prejudices, and placing it on the direct road which leads to scientific truth. The best edition of Bacon's works is that edited by Spedding, Ellis, and Heath, vols. I.—XV. (London and Boston, 1858—1861). In this is contained the life of Bacon by *William Rawley,* D.D., his chaplain.—See also MACAULAY'S *Essays,* s. v. *Bacon;* HEPWORTH, *Personal History of Lord Bacon* (London, 1859); RÉMUSAT, *Bacon, sa vie et son influence* (Paris, 1857); KUNO FISCHER, *Francis Bacon von Verulam* (2d edit., Leipsic, 1875), which has been translated into English by JOHN OXENFORD (London, 1857); *American Journal of Education,* vol. IV. (1829), passim.

BADEN. See GERMANY.

BAHRDT, Carl Friedrich, a German professor and scholar, was born in 1741, and died in 1792. As professor of theology at the universities of Leipsic, Erfurt, and Giessen, he was regarded as one of the foremost representatives of the theological rationalism which prevailed at that time. As his dissolute life and his fondness for violent theological quarrels made his position as professor of theology impossible, he eagerly accepted, in 1775, the management of a *philanthropin* founded by Herr v. Salis at Marschlins, in the Swiss canton of Grisons. (See PHILANTHROPIN.) As he soon quarreled with his patron, his connection with this institution lasted only one year; but having been appointed superintendent-general at Dürkheim, he established, in May 1777, a new *philanthropin* in the neighboring castle at Heidesheim. This attempt was likewise unsuccessful, and the new *philanthropin* on the brink of ruin, when Bahrdt was suddenly summoned before the *Reichshofrath* (Imperial Court Council) for teaching doctrines not in accord with any of the three churches recognized in the empire, and, without any trial, deprived of all his offices. The unfairness of this treatment gained for him a great deal of sympathy, and from the Prussian government an appointment as professor at the university of Halle; but in consequence of the unsteadiness of his habits, he held this position likewise only a short time, and lost with it the esteem of nearly all who knew him. Bahrdt was one of the most gifted men of his age, and but for his total want of moral character, would undoubtedly have risen to great eminence, both as an educational writer and a practical educator. He founded two educational periodicals, entitled *Literarisches Correspondenz- und Intelligenzblatt* (1776) and *Pädagogisches Wochenblatt* (1778), which clearly indicate the rare talent of the editor, but neither of which survived the first year of its existence. The disrespect which was generally felt for Bahrdt, greatly injured the entire school of Philanthropinists. He published an autobiography, entitled *Dr. Bahrdt's history of his life, his opinions and his vicissitudes* (4 vols., Brunswick, 1790), which is of considerable value for the information it gives of the educational movements of those times.—See LEYSER, *Karl Friedrich Bahrdt* (2d edit., Neustadt, 1870).

BALDWIN UNIVERSITY, at Berea, Ohio, was established in 1846 as Baldwin Institute, for the education of both sexes, by the North Ohio conference of the Methodist Episcopal church. Ten years afterward, it was chartered as a university under its present name. Its design is to provide the means of a thorough general education, or to afford to students a complete scientific basis for the various industrial pursuits. It has a scientific and a classical department, in each of which there are preparatory and collegiate classes. There is also a college of pharmacy connected with the institution. It received a valuable endowment in quarry land from John Baldwin, after whom it was named. Its successive presidents have been John Wheeler, D.D., from 1856 to 1871; W. D. Godman, D.D., from 1871 to 1875; and A. Schuyler, LL. D., from 1875. The number of students in the institution, in 1875—76, was 180. The tuition is free.

BALTIMORE. The first attempt to provide the means of education for the lower classes in this city was the establishment, in 1820, of a school on the Lancasterian system. In 1825, an act was passed by the legislature, which authorized the establishment of public schools in Baltimore, and empowered the corporate authorities to levy a tax for their support. In 1828, a board of six school commissioners was organized; and, the next year, three schools were opened, and 269 pupils enrolled. The first school-house was erected in 1830, hired buildings having previously been used. In 1839, the number of pupils enrolled had increased to 1,126; and the mayor and city council requested the commissioners to establish a high school. The request was promptly complied with, and the school opened the same year. This had the effect not only to raise the grade, but to increase the efficiency, of the common schools; for, the next year (1840), there were nine schools in operation, with 1,834 pupils. Since that time the growth of the system has been rapid. In 1874, there were 122 schools, and the number of pupils enrolled was 29,108, of whom there were 23,362 in average attendance. The first superintendent of public instruction was Rev. J. N. McJilton, who served for about twenty years, acting, from 1849 to 1866, as treasurer of the board as well as superintendent of the schools. He was succeeded, Feb. 1., 1868, by William R. Creery; and after his death, May 1., 1875, the present incumbent, Prof. Henry E. Shepherd, was elected to the position.

School Statistics. — For the year ending Sept. 30., 1875, the following statistics were reported:

Number of schools	125
Number of pupils enrolled	42,589
Average daily attendance	24,918
Number of teachers	706
Number of months schools were open.	10
Amount paid for teachers' salaries	$426,719.75
do do for school buildings	167,363.78
do do for books and stationery	51,757.49
do do for colored schools	45,496.78
do do for other expenses	25,601.02
Total expenditures	$716,938.82

The school age is from 6 to 18; and the number of children in the city between those ages was reported, in the census of 1870, as 77,737.

School System, — The system consists of a school board of twenty members—one for each ward of the city; a city superintendent, and assistant superintendent; a city college; two female high schools; a Saturday normal class; 19 male and 20 female grammar schools; 61 primary schools; 10 evening schools, of which 4 are colored; and 11 day schools for colored children.

The *Commissioners of Public Schools*, constituting the school-board, are appointed by the two branches of the city council assembled in convention, one commissioner being selected from each ward. Their term of office is one year, or until a new board is appointed. This board appoints a superintendent of public instruction whose term of office is four years, unless sooner removed by the board. It also has authority to employ teachers and determine their salaries, to prescribe the courses of study and the books to be used in the schools, and to make all needful regulations for the management of the same.

The *studies prescribed for the primary schools* are spelling, definition of common words, reading, writing, geography, the primary rules of arithmetic, drawing, and music. The *studies for the male grammar schools* are spelling, etymology, reading, writing, composition, grammar, geography, history of the United States, history of Maryland, natural philosophy, arithmetic, algebra, drawing, music, and single-entry book-keeping. For the female grammar schools the same studies are prescribed, except algebra and book-keeping.

Examination and Qualification of Teachers. —Applicants for the situation of teachers in the public schools must pass a written examination before the committee on examinations of the board. The regular time for such examinations is the second Saturday in November and May of each year; and a certificate is given to each successful candidate, showing the result and the grade. The following are the studies for each position and grade:

I. For any situation in the city college or for principal of a female high school, the studies required to be taught.

II. For first assistants of a female high school, arithmetic, algebra, geometry, history, natural philosophy, chemistry, and moral philosophy.

III. For any other situation in a female high school, the studies which the candidate would be required to teach if appointed.

IV. For principal and first assistant of a male grammar school, arithmetic, algebra, etymology, geography, grammar, history, orthography, natural philosophy, and music.

V. For principal and first assistant of a female grammar school, grammar, modern geography, history, etymology, orthography, arithmetic, and music.

VI. For principal of a primary school, grammar, modern geography, arithmetic, history of the United States, orthography, and music.

VII. For lower assistants in a grammar or primary school, grammar, arithmetic, orthography, modern geography, and music.

In addition to these, all teachers must pass an examination in geometry and physiology before receiving a certificate of any grade.

Two-thirds of the questions in each branch must be answered in order to pass the candidate for any grade.

No person is eligible to any position as teacher in any of the schools under the following ages:

Professor in city college or principal of a male grammar school	21 years.
First assistant in male grammar school	19 years.
Principal of female grammar school	20 years.
Principal of a primary school	20 years.
First assistant in female grammar school	18 years.
Assistant in female high school	18 years.
Second assistant in grammar or primary school	17 years.

Industrial Education.—Voluntary instruction in the domestic and industrial branches of female education is given by the teachers in several of the grammar and primary schools. This was commenced at the request of the president of the school board, and embraces sewing, knitting, embroidery, and some other useful branches, one afternoon of each week being set apart for the instruction. The results have been highly approved, as affording an accomplishment of great practical value both in the home-circle and as a means of support.

Training of Teachers.—The normal class, established Sept. 12., 1874, is designed to afford to newly appointed teachers of the city schools instruction in the theory and practice of teaching. It is under the supervision of the superintendent of public instruction. The State Normal School is located at Baltimore, besides which there is a normal school for the instruction of colored teachers. (See MARYLAND.)

BALTIMORE CITY COLLEGE. This institution is under the care of the commissioners of public schools of Baltimore, and forms a part of the common school system of that city. It was originally established as the Central High School, with 46 pupils; but has graduated more than 500 students. The number on the roll Oct. 31., 1874, was 400, and the number of instructors was 11. Candidates for admission must pass a satisfactory examination in spelling, writing, grammar, geography, arithmetic, and algebra through simple equations. The curriculum embraces the English, French, German, and Latin languages (Greek optional), history, writing, and book-keeping, arithmetic, algebra, geometry, trigonometry, analytical geometry, calculus, physiology, chemistry, physical geography, natural philosophy, astronomy, psychology, logic, rhetoric, moral philosophy, political economy, and the constitution of the United States. The full course is four years. Boys fourteen years of age, whether pupils of the public schools or not, may be admitted on passing the required examination. A handsome and spacious edifice for the accommodation of this institution was completed in 1875.

BALTIMORE FEMALE COLLEGE, at Baltimore, Md., was founded in 1849, and was under the control of the Methodist Episcopal Church from that date to 1868, when, by an act of the legislature, the Board of Trustees became a permanent corporation; and the Board is now composed of Methodists, Episcopalians, and Presbyterians. The number of students in the institution is (1876) about 100; Nathan C. Brooks, LL. D., has been the president of the College since its foundation. It has an endowment of $2,500 from the State of Maryland, but tuition fees constitute its chief support. While its course of higher education has been general, it has trained and sent forth 157 teachers, most of whom are occupying positions of responsibility in academies, high schools, and colleges.

BAPTISTS, a denomination of Christians distinguished by the denial of baptism to infants, and by the restriction of that rite to those who therein profess personal faith and regeneration. They baptize by immersion only, and in the form of their church-government are congregational. In England, they are known as General and Particular, the former, which is by a few years the older denomination in that country, being Arminian, and the latter, which composes the far greater part of the denomination, being Calvinistic, in theology. They are likewise distinguished as Close-Communion and Open-Communion, the larger part of the denomination in England being Open-Communion. Baptists came to this country with the first settlements. In Rhode Island, their churches are as old as the colony; and before the close of the seventeenth century they had gathered churches in Boston, in the neighborhood of Philadelphia, and at Charleston. Their rapid growth commenced about the middle of the eighteenth century. At the time of the Revolution, they are supposed to have had about 25,000 communicants. In 1876, they have more than 1,800,000. The great body are known by the appellation Baptists; lesser bodies are known as Free-Will, or lately as Free, Seventh-Day, Six Principles, and Old School. All these last constitute a fraction only of those who bear the generic name. The Disciples, or Campbellites, followers of Alexander Campbell, are a large secession, distinguished by peculiar theological views. In this country, the Baptists, meaning by this the chief denomination so called, are Close-Communion;—that is, believing that no baptism is regular which is not the baptism of a believer and by immersion, and that a regular baptism is to preach participation in the Lord's Supper, they restrict their communion to the members of their own churches.

Several of the ministers in the rise of the Baptist denomination in England, were university graduates: but that source hopelessly failing with the Restoration, the Baptists are found, with other denominations, taking measures for the education of a ministry by means strictly their own. The first resort was to private tuition, and Mr. John Tombes, at one time preacher in the Temple church, London,, was the teacher of young ministers. In 1675 and in 1689, concerted action was taken in the denomination in this direction. Edward Jewell of Bristol, dying about 1686, left a legacy which provided for instruction to candidates for the ministry, and became after the lapse of thirty years the foundation of a school, known still later as the Bristol College. With the growth of the denomination several other colleges arose, which according to the "Baptist Hand-Book for 1876" (London. 1876) were located in the following places: Rawdon near Leeds (founded at Horton, 1804, removed to Rawdon 1859); Pontypool, (founded at Abergavenny, 1807, removed to Pontypool, 1836); Regents Park, London (founded 1810; removed to Regents Park, 1856); Haverfordwest (founded 1839); Chilwell, near Nottingham (founded 1797, removed to Chilwell, 1861); Pastor's College, Metropolitan Tabernacle, London, (founded 1861); Llangollen, or North Wales (founded 1862); Manchester Baptist Theological Institution (founded 1866); The East End Training Institute for Home and Foreign Missions, London (founded 1873). All these colleges are understood to be for the education of ministers only.

In the American colonies, the denomination had not grown to sufficient magnitude in the seventeenth century to undertake any denominational work in education. In the earlier years of the eighteenth century, appear their first graduates from American colleges. Down to and including 1776, the number of their college-bred ministers, as far as can now be ascertained, was 19, of whom, however, two were not graduates. They had an equal or larger number whose education was not greatly inferior to that of a college course.

Notices of attempts towards the education of their ministry under denominational auspices, appear early in the history of the Philadelphia Association,—the benefactions to Harvard College of Mr. Hollis, a London Baptist, having been a stimulus in that direction. Similar measures were taken in 1755 in the Charleston Association. In 1756. was opened the Academy at Hopewell, N. J., which was the cradle of Rhode Island College, now Brown University, organized in 1764. Academies had been opened and sustained for many years by individual teachers, in the half century following the establishment of Brown University, but no general movement in the direction of education occurred till about the time of the organization of the denomination for the work of missions. In this organization education was embraced. To this date, 1812—20, must be referred efforts to establish theological schools in Philadelphia and New York City, at Waterville, Maine, and at Hamilton, N. Y., and the rise of several societies to give pecuniary aid to young men preparing for the ministry. The Philadelphia movement became merged in the founding of Columbian College, Washington, D. C.; the New York movement in the rise of the institution at Hamilton, now known as Madison University, but having in alliance with it a theological seminary; and the Waterville movement in the establishment of the college, now known as Colt University. With the close of that decade commenced the rapid establishment of colleges and universities under the auspices of the denominations in all parts of the country. Georgetown College, Ky., bears the date of 1829; Denison University, Ohio, 1831; Shurtleff College, Ill., 1832; Wake Forest College, N. C., 1834; Franklin College, Ind., 1834; Mercer University, Ga., 1837; Richmond College, Va., 1840; Howard College,, Ala., 1843; Baylor University, Texas, 1845; University at Lewisburg, Pa., 1847; William Jewell College, Mo., 1849; University of Rochester, N. Y., 1850; Mississippi College, 1850; Furman University, S. C., 1851; Mossy Creek College, Tenn., 1853; Central University, Pella, Iowa, 1853; Kalamazoo College, Mich., 1855; Bethel College, Ky., 1856; McMinnville College, Oregon, 1858; University of Chicago, Ill., 1859; Waco University, Texas, 1861; Vassar College, N. Y., 1861; University of Des Moines, Iowa, 1865; La Grange College, Mo., 1866; Concord College, New Liberty, Ky., 1866; Louisiana Baptist College. Mo., 1869; California College, 1871; Monongahela College, Pa., 1871; Southwestern University, Tenn., 1874. Of the later Colleges, those which have risen to chief reputation and strength, are in the North, Rochester, Madison and Denison, and in the South, Richmond. Vassar, the chief college in the United States for young women, should be ranked with Baptist institutions only from the fact, that the founder, an adherent of the denomination, made the majority of its trustees Baptists, charging them, however, to make it Christian and unsectarian, which they have done. Several of the colleges in the above list are very weak, and some hold the title doubtfully. According to the Baptist Year-book of 1876, the total amount of property held by the Baptist colleges is $8,045,146. This must be accepted as a proximate statement only, and is in part probably exaggerated. Brown University has a very valuable library of 45,000 volumes, several have libraries from 9,000 to 12,000 volumes; Brown University has a library fund of about $27,000, and the University of Rochester of $25,000. The total number of students in 1875—76 was 4,985, of whom 1,092 were females. These numbers, however, are of uncertain significance, because in some cases professional, and in many cases preparatory students are included. The curriculum of these colleges varies in character, but corresponds in that respects to the varying character of American colleges in general. Some of them take rank with colleges of the first class.

There are in the United States six Baptist theological seminaries of the highest grade, besides departments of theology in four or more colleges. Of these seminaries, Hamilton was founded in 1820, Newton in 1825, Rochester in

1850, Southern in 1859, Chicago in 1867, and Crozer in 1868. In these seminaries, there were in 1875—76, 362 students, of whom probably about 300 were in the complete courses. These courses designed for graduates of colleges, are as high and as thorough as are known to theological seminaries.

There are likewise in the United States about forty academies, or institutions of that grade having other names, which are classed as under Baptist auspices, holding property of the estimated value of $2,000,000. Among these academies or other institutions, are those established under the protection and patronage of the American Baptist Home Mission Society, at Washington, Richmond, Raleigh, Columbia, Augusta, Nashville, and New Orleans, for the education of colored preachers and teachers. These institutions, though in their infancy, are performing a very important and successful service.

There have been three epochs of remarkable character in the educational work of American Baptists. The first, about the middle of the 18th century, had for its fruit the founding of Hopewell Academy and Brown University. The second, contemporaneous with the missionary movement, and a part of the movement itself, was the prolific source of all the later colleges and seminaries. The third may be referred to the year 1870, when the first national educational convention of the Baptists was held under the auspices of the American Baptist Educational Commission, in Brooklyn, N. Y. A remarkable impulse was given by this convention to the founding and endowment of academies, for which purpose very large sums of money have since been raised. From that time, discussions of educational questions in the denomination have been marked by a great increase of breadth and force, the number of students in colleges and seminaries has been increased, and the raising of money for the endowment of institutions of learning has become a simultaneous and universal effort. A second educational convention was held in Philadelphia in 1872. In 1873, the American Baptist Educational Commission recommended the celebration of the Centennial of the nation by a common movement for the raising of funds for educational purposes, and that work is now proceeding.

The Baptists have had many distinguished educators, of whom, among the dead, Francis Wayland and Horatio B. Hackett may be named as pre-eminent. Of the chief benefactors of education, likewise among the dead, may be named, Edward Jewell, Thomas Hollis, Nicholas Brown, and Matthew Vassar. The list of living names would be large and honorable, were there sufficient space here for their enumeration.

BARBAULD, Anna Lætitia, an English writer, is particularly noted for her excellent reading lessons for young children. She was born in 1743, and died in 1825. Her father, the Rev. John Aikin, a Unitarian minister, was the principal of an academy in Lancashire, and took great pains in educating his children. In 1774, she married the Rev. Rochemont Barbauld, with whom she kept school for eleven years. Her most noted educational publications are *Early Lessons for Children*, *Hymns in Prose*, and the pieces which she contributed for *Evenings at Home*, published by her brother Dr. John Aikin. Her miscellaneous writings are numerous and varied. Mrs. Barbauld's books for children are among the best of their class, and have retained their popularity to the present time. Of these and their authoress, Dr. Knox remarks, "A poetess of our own times, remarkably distinguished by her taste and genius, has condescended to compose little books for the initiation of children in reading, and they seem admirably adapted to effect her laudable purpose." (See *Liberal Education*, by Vicesimus Knox.) Her writings were collected and edited by her niece, Lucy Aikin (London, 1825). The same lady also published *A Legacy for Young Ladies* (Lond., 1826), compiled from Mrs. Barbauld's posthumous papers.

BARNARD, Frederick Augustus Porter, LL. D., was born at Sheffield, Mass., May 5, 1809. He graduated at Yale College in 1828, was tutor there in 1830, and, subsequently, teacher in the asylum for the deaf and dumb at Hartford, and in that of New York. From 1837 to 1848, he was professor of mathematics and natural philosophy in the university of Alabama, and afterward of chemistry and natural history till 1854, in which year he took orders in the Protestant Episcopal Church. He was professor of mathematics, natural philosophy, and civil engineering in the university of Mississippi from 1854 to 1861, being also president of that institution from 1856 to 1858, and chancellor from 1858 to 1861, when he resigned. In 1860, he accompanied the expedition to observe the total eclipse of the sun in Labrador, and in the same year was elected president of the American Association for the Advancement of Science. He was one of the original members of the National Academy of Sciences, incorporated in 1863. In 1863—4 he was in charge of chart-printing and lithography in the United States coast survey. He was elected president of Columbia College in 1864, which office he still (1876) holds, and in 1867 was one of the United States commissioners to the Paris exposition. Dr. Barnard is a member of various learned societies in the United States and Europe. During his residence in the South, he was actively engaged in promoting public education. He has been a contributor to the *American Journal of Education* and to Silliman's *American Journal of Science and Arts*. Among his publications, which have related chiefly to scientific and educational subjects, may be mentioned: *Treatise on Arithmetic* (1830); *Analytic Grammar with Symbolic Illustrations* (1836), which originated a system still used in the principal institutions for the deaf and dumb; *Letters on College Government* (1854), which attracted much attention; *Report on Collegiate Education* (1854); *Art Culture* (1854); *History of the United States Coast Survey* (1857); *University Education*

(1858); *Undulatory Theory of Light* (1862); *Machinery and Processes of the Industrial Arts, etc.* (1868); and *Metric System of Weights and Measures* (1871).

BARNARD, Henry, LL. D., was born in Hartford, Ct., in 1811. He graduated from Yale College in 1830 with honor, his course having been marked by diligence and success in the classics and an unusual devotion to English literature. The next five years were devoted chiefly to the study of the law, joined to a diligent reading of the best English and classical authors. During this period, he taught school for a time, and toward its close spent some months in traveling through the western and southern portions of the United States. In 1835, he visited Europe, and traveled extensively on foot through England, Scotland and Switzerland, devoting his attention chiefly to the social condition of the people. On his return, after an absence of eighteen months, he was elected to the Connecticut legislature and represented his native city in that body for three years. There, various measures relating to the social, intellectual, and moral condition of the people engaged his attention, embracing the education of the deaf and dumb, and the blind, the care of the poor and insane, the reorganization of county prisons, the establishment of public libraries, and the completion of the geological survey of the state. His great work was the originating and securing the passage of an "Act to provide for the better supervision of common schools," which created a board of commissioners, whose duty it was to investigate the condition of the schools, and to endeavor to improve them by addresses, lectures, correspondence, the publication of a journal, and the recommendation of appropriate measures. Mr. Barnard was a member and secretary of this commission for four years, until it was abolished by adverse political action in 1842. In this capacity the duties of the board devolved chiefly on him; besides which he edited the *Connecticut Common School Journal,* and made four annual reports, which were marked by great ability and were highly commended. After fifteen months spent in a tour of the United States for the purpose of collecting materials for a *History of public schools and other means of popular education in the United States,* he was appointed commissioner of public schools in Rhode Island, an office which he had been instrumental in creating. In five years he organized an excellent system of popular education, and on retiring from office, in consequence of ill health, in 1849, he received the unanimous thanks of the state legislature. During this period he published several volumes relating to the schools of Rhode Island, and edited (1845—9) the *Journal of the Rhode Island Institute of Instruction.* From 1850 to 1854, he was principal of the newly established Connecticut state normal school and state superintendent of common schools, again editing the *Common School Journal.* In 1855, he was chosen president of the American Association for the Advancement of Education, and, in 1856, he commenced the publication of the *American Journal of Education.* From 1857 to 1859, he was chancellor of the university of Wisconsin, and in 1865 — 6 president of St. John's College, Annapolis, Md. Upon the organization of the United States bureau of education, in 1867, for the establishment of which he had labored, he was appointed the first commissioner and held the office till 1870. Dr. Barnard has done much toward the improvement of school architecture, the organization of teachers' institutes, and the establishment of high and normal schools. Among his works are, *School Architecture* (1839), of which 130,000 copies were sold; *Normal Schools* (1851); *National Education in Europe* (1854), which was said by the *Westminster Review* to group "under one view the varied experience of nearly all civilized countries"; *Educational Biography* (1857); *Reformatory Education* (1857); *Object-Teaching* (1860); and *Military Schools* (1862).

BASEDOW, Johann Bernhard, the founder of the *Philanthropin,* was born in Hamburg, in 1723. His early youth was gloomy and unhappy, owing to the excessive severity of his father and the habitual melancholy of his mother. While still a boy, he ran away from his paternal home, and entered the service of a country physician in Holstein. Having returned to Hamburg, upon the urgent entreaties of his father, he entered the *Johanneum,* where he became noted among his school-mates for his foolish tricks. In 1741, he went to the gymnasium of Hamburg, where Reimarus, the famous author of the *Wolfenbüttel Fragments,* was among his teachers. While there, he had to support himself by giving private lessons and writing occasional poems; but a large portion of the money which he earned was spent in debauchery, and his own studies were conducted without system or perseverance. From 1744 to 1746, he studied theology and philosophy at the university of Leipsic. He was very irregular in attending the lectures; and the Wolffian philosophy, which at that time predominated, brought him, as he says himself, "into a state of half-way between Christianity and naturalism." In 1749, he was engaged by Herr von Quaalen, in Holstein, as private tutor for his children; and while in this position, worked out for his pupils a new method of studying languages, an account of which he has given in a Latin dissertation, entitled "*De inusitata et optima honestioris juventutis erudiendæ methodo*" (Kiel, 1752). Herr von Quaalen, who was much pleased with the results of Basedow's teaching, procured for him, in 1753, the chair of ethics and fine arts, and subsequently that of theology, at the *Ritterakademie* (Knights' Academy) at Soröe. On account of the unorthodox views expressed in his work *On practical philosophy for all ranks,* he was obliged, in 1761, to remove to the gymnasium of Altona. Here, two other heterodox publications, *Philalethia* and *Methodical Instruction in both Natural and Biblical Religion,* involved him in a severe controversy with several theologians, among others

Senior Götze of Hamburg, and caused him and his family to be excluded from the Communion. In 1767, he conceived a comprehensive plan for a radical reform of public education, and soon succeeded in securing the support of the Danish minister Bernstorff, who relieved him from the duties of his position, and granted him a salary of eight hundred thalers. In 1768, he published the *Address to the Philanthropists and Men of Property, upon Schools and Studies, and their Influence upon the Public Weal* (*Vorstellung an Menschenfreunde etc.*) with the plan of an elementary work on human knowledge. He applied to many princes, governments, ecclesiastical dignitaries, freemasons' lodges, and other learned men and societies, to aid him in the publication of the elementary work which he proposed; and the success of these applications was so great, that, in 1771, contributions amounting to more than $10,000 had been received. As the first part of the proposed *Elementarwerk*, Basedow published, in 1770, *Methodenbuch* (*book of methods*), of which a second edition appeared in 1771, and a third in 1773. The chapter on *Education of Princes*, was omitted in the second edition of the work, and having been revised "with a care worthy of the subject," it was published in 1771, as a separate work, under the title of *Agathocrator*. Prince Albert of Dessau sent the author, in return for a copy of this book, 100 thalers; and the emperor Joseph II., a medal with his portrait. At the same time, Basedow received from the ruling prince of Dessau, Leopold Frederic Francis, a call to Dessau, to carry out his plan of a large reformatory educational institution. Having, accordingly, removed to Dessau, he published there, in 1774, his long expected *Elementarwerk*, in 4 vols., illustrated with one hundred plates, mostly engraved by Chodowiecky. The object of this book is, as Basedow himself remarks, (1) Elementary instruction in the knowledge of world and things; (2) An original method, founded upon experience, of teaching children to read without weariness or loss of time; (3) Natural knowledge; (4) Knowledge of morals, the mind, and reasoning; (5) A thorough and impressive method of instruction in natural religion, with a perfectly impartial account of dogmatic articles of belief; and (6) A knowledge of social duties, of commerce, etc." This work was translated into Latin by Mangelsdorf, and into French by Huber.

The foundation of the educational institution which became famous in history as the *Philanthropin*, was laid in Dessau, Dec. 27., 1774. The prince of Dessau gave the building, a garden, and $12,000. The object of the institution was to supply a model school in which the principles of the *Elementarwerk* could be applied to practical methods. Poor pupils were received at reduced rates, under the name of *famulants*. In 1775, the number of boarders was nine, and of famulants six. Many of the prominent scholars and educators of the time, as Kant, Oberlin, Nicolai, and Zollicoffer, took a profound interest in this novel institution, which, as Basedow promised, was to be free from sectarian bias and to be carried on without a resort to corporal punishment; gymnastic exercises were to be afforded and the work of learning was to be made "three times as short, and three times as easy as it usually is." The expectations raised by Basedow's enthusiastic announcements and promises were, however, not realized. As early as Dec., 1774, Basedow was obliged to transfer the supreme management of the institution to Campe, under whom the number of pupils rose to 50. For a short time, Basedow was again placed at the head of the institution; but, in 1778, he had finally to leave it. In 1784, the periodical of the *Philanthropin*, entitled *Pedagogical Conversations* (*Die pädagogischen Unterhaltungen*) was discontinued; and, from that time, the institution declined rapidly, and was soon entirely abandoned. The teachers, however, were scattered through all parts of Germany, applying in various ways the principles of the founder. Basedow devoted the last years of his life to writing theological and educational works. He died, July 25., 1790, at Magdeburg. His last words were, "I desire to be dissected for the benefit of my fellow-men." Like Rousseau, Basedow gave a powerful impulse to the discussion of new educational theories; and he resembled Rousseau, too, in being entirely unfitted for a practical educator. There was much in his method of teaching that appeared strange, eccentric, and even farcical; but, on the other hand, those who most severely criticise his defects, readily acknowledge that his life-long labors in behalf of education were not in vain. His purpose was, without doubt, honest and unselfish. Like Rousseau, he labored ardently, and with considerable success, for the removal of many unnatural restraints, which, at that time, were so common. Physical education, according to his system, was attended to in a manner quite original at that time; and the favorite principle of Basedow that the scholars should learn with love, and not with repugnance, had a most beneficent influence upon the practical methods of other educational institutions. — See Raumer, *Geschichte der Pädagogik*, vol. II. (translated in Barnard's *German Educational Reformers*); Max Müller (grandson of Basedow) in *Allgemeine Deutsche Biographie*, art. *Basedow*; Meyer, *Character und Schriften Basedow's* (2 vols., Hamburg, 1791—1792); Quick, *Educational Reformers* (London, 1868, and Cincinnati, 1874).

BATES COLLEGE, at Lewiston, Me., was established in 1863, by the Free Baptists, and named in honor of Benjamin E. Bates of Boston, who contributed $200,000 to its endowment. It has handsome grounds, three fine college buildings, and a president's residence. The value of its grounds, buildings, and apparatus is about $200,000. In 1874, it had a corps of 8 instructors, and 100 students in the different college classes, of whom 3 were females. Nine different schools and academies act as preparatory schools for this college. There is here an endowed scholarship for a lady student, supposed to be the first instance of such an appropriation in any of the colleges of this country. There are ten state scholarships, giving tuition to ten students, to be selected by the governor; and in awarding these scholarships, preference is required to be given to the children of those who have fallen in defense of their country, and always to those who are indigent and meritorious. There is a professorship of mental and moral philosophy, named after Asa Reddington, LL. D., of Lewiston, who gave a large amount toward its endowment. The Cobb professorship of logic and Christian evidence was named in honor of J. L. H. Cobb, of Lewiston. who contributed the chief portion of the funds for its endowment. The various libraries,—college, theological, and societies', contain about 9,000 volumes. The president of the institution is (1876) Rev. O. B. Cheney, D. D. The annual tuition fee is $36.

BAVARIA. See GERMANY.

BAYLOR UNIVERSITY, at Independence, Tex., was founded in 1845 by the Baptists. It had. in 1874, a corps of 5 instructors, 2 endowed professorships, 81 students, and a library of about 3,000 volumes. It has a theological as well as a collegiate department. The value of its grounds, buildings, etc. is estimated at $35,000; its endowment is about $16,000. Rev. Wm. C. Crane, D. D., LL. D., is (1876) the president. The annual tuition fee is from $30 to $60.

BEACH GROVE COLLEGE, at Beach Grove, Tenn., was founded in 1868. It had, in 1874, a corps of 5 instructors, and 106 students in its preparatory, and 18 in its collegiate department. Its grounds, college buildings, and apparatus are valued at $30,000. M. Parker, A. M., is (1876) the president. It is non-sectarian.

BÉBIAN, Roch Ambroise Auguste, a noted teacher of deaf-mutes, was born on the island of Guadeloupe, in 1789, and died there in 1834. He was godson of the abbé Sicard, so celebrated for his efforts in behalf of the instruction of deaf-mutes, and under him was prepared for the task which he afterwards assumed. After the publication in 1817, of his *Essai sur les sourds-muets et sur le langage naturel,* he was appointed a professor at the royal institution; but the jealousy and opposition excited toward him by his zeal for innovation and reform, compelled him to resign, in 1825, after which he returned to Guadeloupe. His *Éloge historique de l'abbé de l'Epée* obtained a prize from the academy. His other important publications are, *Mimographie, ou Essai d'écriture mimique* (1822), and *Manuel d'enseignement pratique* (1827).

BEDE, or **Beda,** styled the *venerable Bede,* a celebrated Saxon ecclesiastic and scholar, and the earliest English historian, was born in Durham, England, about 677, and died in 735. He possessed an excellent character, was humble, diligent, and truly pious; and rose to great eminence in the church through his learning and literary ability. His biography, written by his pupil Cuthbert, says of him, that having been brought by his relations, in his seventh year, to the abbot Benedict Biscop, in Wearmouth, he devoted all his energies to the study of the Scriptures, and occupied his spare time in learning, teaching, and writing. He spent his entire life in the monastery of Wearmouth in study and teaching, and acquired a wide reputation both as an instructor and a scholar. Many students came from afar to hear him; and others, who could not come in person, requested of him, by letter, explanations of difficult biblical passages. Of his method of teaching, nothing is recorded; but it consisted, without doubt, of lectures to the students. There is no doubt that he possessed an attractive delivery, and the excellence of his diction may be seen from his literary works. His studies were, by no means, confined to theology, but extended to every science, as we see from his work on orthography and his works *De arte metrica, Liber de schematis et tropis sacrœ scripturae,* and *De natura rerum,* the latter treating of physics, astronomy, and geography. The greatest of his works, the *Ecclesiastical History of the English Nation,* written in Latin (*Historia Ecclesiastica Gentis Anglorum*), was translated into Anglo-Saxon by King Alfred, and is still the best authority for the period on which it treats. Bede's complete works, as far as extant, have been published by Dr. GILES (London, 1843—1844). A new English translation appeared in 1871.—See also WRIGHT, *Biographia Britannica Literaria,* vol. I. (London, 1842).

BELGIUM, a kingdom of Europe, has an area of 11,373 sq. m., and a population, in 1873, of 5,253,821. Almost the entire population belongs nominally to the Roman Catholic Church. The number of Protestants is variously estimated at from 10,000 to 26,000; that of the Jews at 2000. The influence of the Catholic Church on legislation is greater than in any other country of Europe, and the Catholic party, which aims at shaping the legislative functions of the national assembly in accordance with the heads of the Church, has controlled the destinies of the nation during the greater part of the time which has elapsed since the establishment of Belgian independence. The Belgians are almost equally divided into two nationalities, the Flemish, a branch of the German race, and the Walloon, an offshoot of the French. The Flemings are estimated at about 49,8 per cent of the population, and prevail in the provinces of East Flanders (92,4 per cent of the total population), Antwerp (92,4 p. c.), Limburg (88,8 p. c.), West Flanders (88,0 p. c.), and Brabant (56,1 p. c.), while the Walloons have a majority in the provinces of Liege (89.6 p. c.), Hainault (95.8 p. c.), Namur (99.1 p. c.), and Luxemburg 84.7 p. c.). The country constituting the present kingdom of Belgium formed part of the great Carlovingian empire, after the dissolution of which, the Scheldt formed the boundary between France and Germany. Subsequently it was united with Burgundy, conjointly with which it was inherited by the kings of Spain. The peace of Utrecht (1713) gave it to Austria, from which, in 1794, it was conquered by the French. On Napoleon's abdication in 1814, it was united with Holland, with which it remained until 1830, when a successful revolution established its independence. The first schools after the introduction of Christianity were connected with convents and collegiate churches, and some of them, as the schools of Liege, Gemblours, Dornick, Ghent, etc., achieved a high reputation. Elementary schools were established in many places by the monastic order of the Hieronymites or Hieronymians. During the rule of the Dukes of Burgundy, the famous university of Louvain was founded (in 1426), which soon occupied a front rank among the high schools of Europe, and at one time was attended by 6000 students. During the Dutch rule, a thorough system of inspection, reports, and full publicity, was instituted; a normal school was established at Liege in 1817, and in 1822 all persons were forbidden to exercise the functions of a school-master in the higher branches of public schools who were not authorized by a central board of examination. On the other hand, however, the efforts of the Dutch government to repress the use of the French language and the influence of the Roman Catholic Church, produced an intense and general dissatisfaction, and became one of the primary causes of the revolution of 1830, and the permanent separation of Belgium from Holland. The overthrow of the hated Dutch rule was naturally followed by the abolition of the educational laws introduced by the Dutch government. In the place of the strict control of the entire educational system by the state, the most absolute freedom of instruction was now introduced. The clergy founded a number of schools, which remained under the exclusive control of the church, while the Liberal party supported, in opposition to the church schools, the public school system. In 1836, a compromise between church and state was arrived at. The government gave to the clergy an influence upon the state schools, while the church subjected all its schools which received support from the *commune*, the government, or public funds, to the inspection of the state. Since 1865, the educational question has been the subject of a very animated controversy between the Liberal and the Catholic parties. The Liberals founded an association called *Ligue de l'enseignement*, which aimed at emancipating the state schools from the influence of the church.

Primary instruction is based on the law of Sept. 23., 1842. This law provides that every *commune* (the smallest territorial and civil subdivision of the state) must have at least one public elementary school, unless the instruction of all the children is sufficiently provided for to the satisfaction of the government, in private, endowed, or denominational schools. The elementary school must be free to the poor, and may be made free to all by vote of the communal council. The primary school must give instruction in religion and morals, in writing, in the mother-tongue of the children (French or Flemish), and in arithmetic. The law provides for a superior elementary school in every large city. In 1850, this class of schools was changed into secondary schools. The schools are managed by the communal council, and the expenses required for their support are included in the local taxes. The teachers are chosen by the communal council from among candidates who have for at least two years pursued the studies of a normal school. They must receive a certificate of qualification from a board consisting of a lay and a clerical member, the former appointed by the state and the latter by the ecclesiastical authorities. The communal council may suspend the teacher for three months, the provincial inspector may, on consultation with the communal council, dismiss him. The inspection of primary schools is exercised both by the state government and the ecclesiastical authorities. The king appoints a cantonal inspector for each canton, and a provincial inspector for each of the nine provinces. The cantonal inspector is appointed for the term of three years. He must visit each school of his district at least twice a year, and report to the provincial inspector. The latter must visit each school at least once a year, and report to the minister of the interior. All the provincial inspectors assemble once a year as a central commission, under the presidency of the minister of the interior. The bishops also appoint cantonal and diocesan inspectors, and must once a year report to the minister of the interior on the state of moral and religious instruction. In the Protestant and Jewish schools a delegate of the consistory superintends the religious instruction. The government annually publishes a list of text-books that may be used. From this list each teacher can make his selection. There is no special ministry of public instruction, but all educational matters are assigned to the minister of the interior, with a separate bureau. The state has established two normal schools for primary teachers, a Flemish school at Lierre, and a Walloon school at Nivelles. There are, besides, seven normal departments annexed to higher primary schools, and seven episcopal normal schools, which have been placed by the bishops under government supervision. The courses of instruction in the state normal schools are for three years, and in the episcopal schools for four. The pupils are usually required to board and lodge upon the school premises. Teachers' conferences, generally occupying only one day, and never more than three, are held quarterly during vacations, and conducted by the provincial and cantonal inspectors.

Secondary instruction was re-organized in 1850. The secondary schools are of two grades. The higher grade, known as *athenæums*, includes two sections, one for classical instruction which corresponds to the German gymnasium, and is for six years, and one for industrial instruction, corresponding to the *realschool* of Germany, and being for four years. The superintendence of secondary instruction belongs to a general inspector and two special inspectors. The law of 1850 provides for a council of secondary instruction (*conseil de perfectionnement*), consisting of at least 8 and not more than 10 members. The highest grade of instruction is that dispensed by the universities. Of these, there are four. Two, those of Ghent and Liege, belong to the state; one, that of Louvain, to the bishops; and one, that of Brussels, to an association of Liberals. Ghent, Liege, and Brussels have each four faculties; Louvain has five. There is a council of superior studies (*conseil de perfectionnement de l'enseignement supérieur*), consisting of the 2 rectors and 8 professors of the state universities (1 from each faculty), the school inspectors, and some private individuals. Industrial instruction is given in institutions of three grades; higher instruction, in the special schools of arts, and manufactures and mines, attached to the University of Liege, in those of civil engineering, and of arts and manufactures, annexed to the University of Ghent, and in the superior institute of commerce at Antwerp; intermediate instruction in the industrial departments attached to all the athenæums and high schools; primary instruction, in the industrial schools for workmen. The latter are very numerous, lace-making alone being taught in 586 schools. There is a military school for training officers of all arms, regimental schools for the instruction of ignorant soldiers, and a school for the education of soldiers' children. There are 2 veterinary schools, 3 conservatories of music, 72 schools of drawing, painting, sculpture, and architecture, a national observatory, 2 schools for deaf-mutes, 1 for the blind, 6 for orphans, and 3 for young criminals.

Education in Belgium is not compulsory, and the number of children receiving no kind of instruction is still large. Of the conscripts there were, in 1845, 391 out of 1000, who could neither read nor write; in 1863, 302.

The salaries of primary teachers were fixed by a law of 1863 as follows: (1) in schools with more than 100 scholars, minimum salary 1,050 francs; (2) in schools with from 60 to 100 scholars, 950 francs; (3) in schools with less than 60 scholars, 850 francs. The chief town of every province has a special savings-bank for teachers (*caisse de prévoyance*), into which every teacher is required annually to pay a certain fixed amount from his salary, and which also receives contributions from the provinces, the state, and private individuals. Every teacher who is sixty years old and has served thirty years is entitled to a life pension. The full pension of teachers is also paid to their widows and to their orphans till the latter have reached their 16th year.

Of the four universities of Belgium, the free Catholic University of Louvain had, in 1872, the largest number of students (901); the free (*liberal*) University of Brussels had 583; the State University at Liege 436, and the State University of Ghent 210; the Royal Academy of Fine Arts at Antwerp, 1576 students. The Conservatory of Music at Brussels was attended by 675 pupils, that of Liege by 789. The number of teachers in the primary schools, in 1874, was 10,629, of whom 7,032 were laymen, and 3,597 members of religious orders and clerics. The latter class has increased since 1851 by 1,098, the former only by 624. The schools for adults numbered 199,957 pupils, 9,219 more than in 1848, being 3.98 per cent of the population. The aggregate expenditures made for primary instruction, in 1874, were as follows: national government, 6,643,415 francs; provinces 1,584,010 fr.; communes 5,863,561 fr.; total 14,090,986 fr. To what extent illiteracy still prevails may be inferred from the fact that, in 1874, of 43,311 men who were drafted for the militia, 8,727 could neither read nor write, 1,976 could only read, 15,726 could read and write, 16,228 had a higher education, and of 654 the degree of instruction was unknown. — See Barnard, *National Education*, part II., p. 369 to 401; Juste, *Histoire de l'instruction publique en Belgique* (1840); *Rapports triennaux, publiés par le gouvernement sur l'enseignement des trois degrés*; *Annuaire statistique de la Belgique.*

BELL, Andrew, D. D., a distinguished educationist, the author of the system of mutual or monitorial instruction sometimes called the *Madras system*, was born at St. Andrews, Scotland, in 1753, and died at Cheltenham, England, in 1832. He was educated at the University of St. Andrews, went to America, and after a short residence there, returned and took orders in the Episcopal Church. In 1787, he embarked for India, and on his arrival at Madras, was appointed chaplain to the English garrison, and also superintendent of the school then recently established for the education of the orphan children of British soldiers. Finding great difficulty in obtaining the assistance of competent teachers in this arduous work, he resorted to the expedient of conducting the school by means of the pupils themselves. This method was partly suggested to his mind by his seeing, on one of his morning rides, the children of a Malabar school sitting on the ground and writing with their fingers in sand. He immediately introduced this method of teaching the alphabet into his school, and finding the ushers averse to the innovation, gave the A-B-C class to a boy whom he selected as especially fitted for the task. This boy, whose name was John Frisken, and who was probably the first monitor in English education, was the son of a soldier, and then about eight years old. The success of this lad induced Dr. Bell to extend the experiment. He appointed other boys to teach the lower classes; and soon afterwards applied his system of monitors to the whole school (1791). This was continued under his superintendence till his return to Europe, in 1796. (See Monitorial System.) After his arrival in England, he drew up a full report of his school, which was published in London, in 1797, under the title of *An Experiment in Education, made at the Male Asylum, Madras; suggesting a System by which a School or Family may teach itself under the superintendence of the Master or Parent.* This pamphlet attracted little attention, until, through the efforts of Joseph Lancaster, the monitorial system of instruction invented by him was introduced into the schools of the Dissenters. A controversy as to the respective merits of the systems of Bell and Lancaster then sprung up, the friends and adherents of each claiming for it not only superiority in merit, but priority of invention. The idea of mutual instruction was, however, not new. Indeed, it is as old as Lycurgus; and Lancaster was too candid a man to claim an absolute originality for his plan. In his first pamphlet, published in 1803, he says: "I ought not to close my account without acknowledging the obligations I lie under to Dr. Bell; I much regret that I was not acquainted with the beauty of his system till somewhat advanced in my plan. If I had known it, it would have saved me much trouble and some retrograde movements." This controversy was as much sectarian as educational, as the rival systems were favored, the one by the Dissenters, and the other by the Church of England. It, however, served a useful purpose, in giving an impetus to the progress of education. In 1811, a society, called the *National Society*, was formed for the establishment of schools in connection with the Church of England, on Dr. Bell's plan; and Dr. Bell was appointed to superintend the enterprise, a duty which engrossed much of his time and efforts until his death. By this means, the Madras system obtained an introduction not only in England, but in Scotland and Ireland, as well as in some parts of the United States. For the purpose of bringing it to the notice of educators on the continent, Dr. Bell made an extensive tour, in the course of which he visited the schools of Pestalozzi and Fellenberg, with the former of whom he was quite charmed. "He has much that is original," he remarked, "much that is excellent. If he had a course of study — if he were to dismiss his masters, and adopt the monitorial system and the principle of emulation, he would be super-excellent." In the mean time, the analogous system of Lancaster had been carried into effect in numerous schools established by an association of Dissenters, styled *The British and Foreign School Society;* and much active rivalry existed between the two societies. (See LANCASTER, JOSEPH.) During his life, Dr. Bell received several lucrative offices in the Church, from which he was enabled to amass a large fortune. The whole of this, amounting to £120,000, he bequeathed to various towns in his native country for the endowment of schools. He founded Madras College, at St. Andrews, and a lectureship, at Edinburgh University, on the principles of teaching, and on the monitorial system. On his death, in 1832, he was buried in Westminster Abbey, the highest dignitaries of the Church and many distinguished noblemen attending as mourners. An elegant monument marks his resting-place, with an inscription in which he is characterized as the "Author of the Madras System."—See SOUTHEY, *Life of the Rev. Andrew Bell, D.D.* (Lond., 1844); the *Edinburgh Review*, vol. XXXIII.; LEITCH, *Practical Educationists and their Systems of Teaching* (Glasgow, 1876).

BELLES-LETTRES is a French expression for *polite literature, i. e.*, books and language in so far as they are shaped by the idea of beauty. It has been used in English to designate a somewhat vague class of studies connected, more or less nearly, with the mastery of literature on its esthetic side. Some of the colleges in the United States have had a professor of *belles-lettres*. He has taught rhetoric and elocution mainly; but poetry, drama, prose fiction, criticism, classical philology, the humanities in general, are all in his province. Blair's *Rhetoric* was long widely used as a text-book in this branch; and several editions of it are still kept in print. — Esthetics (the science of beauty) and philology have, of late years, made great advance, and new text-books are needed to set forth modern methods of studying literature and language, so as to understand their beauties. The elements of the study should be taught early. In the kindergarten or other infant school, the children should be taught to admire and examine beautiful objects, to notice the qualities which give them beauty, to name the objects and the qualities; they should be told anecdotes in which beautiful persons do beautiful acts, and the words expressive of beauty should be spoken with tones and gestures which may give them lively associations and a permanent place in the memory; passages of verse or rhythmical prose in which beautiful thoughts are fittingly expressed, and of which the teacher is fond, should be repeated till they are caught by the pupils. Such passages may be among the noblest of our literature. It is not necessary that they should be wholly comprehended by the learners. They may be regarded as music, producing comparatively vague intellectual processes, but quickening powerfully the emotional element of esthetic culture. Language and literature should lead the youth of cultured races to a more rapid development than the natural growth of the understanding. Beautiful and noble words thus learned by heart will serve as molds in which the expanding intellect may flow and form. This early oral instruction may be happily aided by learning to read in illustrated books, in which beautiful pictures are made to interpret and enforce the thought. Some of the magazines for children afford such aid in a good form; such as *The Nursery* (Boston); *St. Nicholas* (N.Y.). Children taught in this way will be ready to pursue the study of *belles-lettres* when they have learned to read with ease. The simplest method used in our schools is the reading in class of selections of characteristic works of the most admired authors in our own and other classic languages. Text-books of selections for this purpose are: HUDSON'S *Text-book of Poetry*; HUDSON'S *Text-book of Prose* (Boston); UNDERWOOD'S *British Authors*; UNDERWOOD'S *American Authors* (Boston); *Typical Selections from the best English Authors from the 16th to the 19th Century* (Clarendon Press, Oxford); most series of School Readers have a class book of literature, and some of them are well selected and arranged. The kind of beauty earliest appreciated is that of adventure. Short stories please; such as fables and parables. The style must be simple, the movement rapid. Lyrics or orations expressing tender or noble feelings come next. The appreciation of epic and romantic narrative will grow rapidly; minute delineation of character, the drama, and the modern novel will then follow, and finally descriptions of works of art, scenery, and nature. The liking for ornate language, figures of speech, rhythmical effects, and other arts of style, generally needs special cultivation to make it strong in young readers. Whatever be the passages chosen to read, the teacher aiming to give instruction in *belles-lettres* will direct the attention of the class to beautiful thoughts, figures, and expressions, and will have them read with care and expression, so as to bring out the thought and feeling of each passage. He may also mention criticisms which have been made on the passage, tell of occasions on which it has been quoted or imitated, quote similar passages in other authors or the same author, and have parts committed to memory. In such studies, more is caught than taught. The teacher must feel the beauties and communicate the feeling by looks and tones. Pupils who read with expression should also be used to heighten the interest of the exercise. A single good reader will often stimulate a whole class. Comment and criticism should be mainly used for pointing out beauties, and exciting admiration for them. Appreciative reading, comment, and memorizing may thus be made a delightful introduction to literature, leading naturally to further study in two main directions,—the historical and the philosophical. The historical is the easier in its beginnings. Courses of lectures on the history of literature, and text-books giving material for historical and biographical study in connection with selections for reading, are to be had. Cleveland's *Compendium of English Literature* (N. Y.) includes the most eminent authors from Sir John Mandeville to Cowper. The same author has published similar works on the *Literature of the 19th Century*, and on *American Literature* (N. Y.). Somewhat like them are Shaw's *History and Specimens of English Literature* (edition by Backus, N. Y.); and Chambers's *Manual of English Literature.* Larger works for the teacher and for reference are Chambers's *Cyclopædia of English Literature* (N. Y.); and Duyckinck's *Cyclopædia of American Literature* (Phila.); and indispensable to the thorough teacher is Allibone's *Dictionary of Authors* (Phila.), which is a great store-house of biography, bibliography, and criticism gleaned from many sources, and quoted at length. With these aids, the student of *belles-lettres* must be led to point out how each successive beauty in the passages which are read is related to the character, education, and times of the author; and by well-directed study he may acquire, in time, clear ideas of the representative works of literary art in the great eras of history,—first of English history, then of the history of other nations. This will require the reading of many more books than can usually be read in school. The teacher should, however, see that many are read. This can best be done by requiring written exercises of such a kind as to assure him of the fact without taking much of his time. He may have brief outlines of stories handed in, as, of some of the *Canterbury Tales;* or the gist of the critical views of some author on a particular point, as Coleridge's in regard to *Hamlet;* or the brief mention of ten of the most interesting passages in a book; as, in the *Pilgrim's Progress*, (1) The Slough of Despond, (2) The Interpreter's House, (3) The Fight with Apollyon, and so on. Or he may ask for biographical facts on which works of art are based; as, what events in Milton's life suggested passages in *Paradise Lost.* Writing should also be freely used to stimulate original production; imitative production is, to be sure, what is to be expected of the young students of *belles-lettres*; but they should use their pens freely, in such a way as the authors they admire or their own powers may prompt. If they show signs of talent, the teacher should encourage them. The meters of the poets may easily be imitated; and it is only by practice in production that the secrets of style are attained or thoroughly understood. The student of *belles-lettres* will soon learn that the English is only one among many classic literatures. He will wish to become acquainted with Homer, Virgil, and Dante as well as with Milton; with Boccacio as well as Chaucer; Goethe as well as Shakespeare. He will wish to learn Greek, Latin, Italian, French, German. (See the articles on these and other languages.) No literature can be mastered without mastering the language in which it was originally written; but much may be done by translations. Several text-books of such selected translations are available: Longfellow's *Poets and Poetry of Europe* (Phila.); Elton's *Specimens of Greek and Roman Poets* (Phila.); Wright's *The Golden Treasury of ancient Greek Poetry* (Oxford); Ramage's *Beautiful Thoughts from Greek Authors*; same from *Latin Authors*; from *German and Spanish*; from *French and Italian* (London); Angel's *French Literature* (Phila.); Berard's *Spanish Art and Literature* (Phila.); Botta's *Universal Literature* (Boston); and *The Hebrew Poetry in the English Bible.* But in order to render this historical study as valuable as possible, it should be accompanied with the critical study of literary works relating to the principles of art, or the laws of beauty. Such study requires a knowledge of descriptive rhetoric and prosody, and of the technical terms of esthetic criticism; so that the students may be able to classify and name the facts which come before them, and talk of them with perspicuity. They should, for example, when set to study a beautiful passage, recognize the rhetorical forms which occur in it, such as similes, metaphors, personification, etc; if it is poetry, they should recognize the poetical forms, such as the meter, with its management of the feet and cæsuras, of rhyme and alliteration; they should be able to apply the ideas of order, proportion, form, expression, and the like, to single beautiful passages, or to whole works of art. This presupposes the study of the science of beauty. (See Esthetic Culture.) The most effective general theory of the beautiful, for use in study of this kind, is that which looks to variety in unity to explain all eminent beauty. Take, for example, Shakespeare's *Julius Cæsar* for study. On reading the first scene, let the class point out the variety (1) among the characters,—as between the tribune and the populace, between the loud and the gentle tribune, between the simple carpenter and the punning cobbler, and the like; (2) in the action,—the meeting, the haranguing, the dispersing of the crowd; (3) in the mode of thought,—now comic, now tragic, foolery and eloquence; (4) in the language,—part prose, part verse, cobbler's puns, tribune's tropes, and the like. This study of variety directs attention to all the particulars of beauty, the elements by which the sensibilities, always craving novelty, are kept pleasurably excited. After these elements have been faithfully collected, let the pupils seek for the unity by which all this variety is made to gratify the reason. Let them point out the central thought in the play; give an outline of the plot by which the thought is developed; and then show how each scene is necessary to bring out the thought, and how each character, each event, each particular beauty, is fitted for its place, and contributes to the one end. Teachers may find such an examination of Milton's *Paradise Lost*, in Addison's papers in the *Spectator*. Topics and questions to guide in such study, are minutely given in March's *Method of Philological Study of the English Language* (N. Y.). For other aids, especially for editions of particular authors, see English, the Study of.—The beauty of language is not all included in the study of it as combined in connected discourse. In single words, also, when we examine their etymology and history, much poetry is to be found. This is an interesting department of *belles-lettres*, and the study of essays in it is a favorite one with most good teachers of language and literature. Among these, may be mentioned, Trench, *On the Study of Words*; and *Glossary of English Words*; and De Vere, *Studies in English* (N. Y., 1867). These books afford many hints which the teacher may use to enliven the study of literature. Teachers should also be familiar with critical essays on art, and introduce them to the acquaintance of their pupils; these constitute a part of *belles-lettres*. Such are Ruskin's *Lectures on Art*, of which selections have been made for reading (N. Y.); Winckelmann's *History of Ancient Art* (Boston); Lessing's *Laocoon* (Boston); Jameson's *Sacred and Legendary Art* (Boston). To these may be added similar books of criticism on literary art; such as those of De Quincey, Lowell, Emerson; Hart's *Spenser and the Fairy Queen* (N. Y., 1847); Hudson's *Shakespeare* (Boston, 1851—6); White's *Shakespeare's Scholar* (N. Y., 1854); Schlegel's *Lectures on Literature* (Phila.).

BELOIT COLLEGE, at Beloit, Wis., was founded by the Congregationalists, in 1845. In 1874, it had a corps of 11 instructors, 146 students in the preparatory, and 65 in the collegiate department, and a library of about 9,000 volumes. Its productive funds amount to $120,000, and the value of its grounds, college buildings, and apparatus, to $90,000. The president of the institution is (1876) the Rev. A. L. Chapin, D. D.

BENEDICTINES, Schools of the. The monastic order founded by St. Benedict of Nursia, at the beginning of the 6th century, occupies a prominent place in the early history of education in Christian Europe. Parochial and communal schools could not thrive well at a time when the people at large felt no desire for education, when the number of teachers was so small, and when the few schools that were established, in connection with the parish churches, had to suffer so much from constant wars. The education offered by the Benedictine order was, at first, intended only for boys who were to enter upon a monastic life. According to the fundamental rule of the order, the separation of the monk from the world should begin as early as possible. Boys, called *pueri oblati*, were admitted when only five years of age. The discipline was strict. The rod was used to punish offenses against punctuality and order, and deficiencies in recitations; more serious offenses were sometimes punished by the scourge. Latin was a prominent part of the instruction, and almost exclusively the language of conversation. Reading, writing, and the singing of psalms were the prominent subjects of instruction; but the course also included rhetoric, dialectics, arithmetic, astronomy, geography, natural science, and medicine. Special attention was given to history, as is proved by the numerous annals and chronicles issued from the Benedictine convents. As few schools outside of the Benedictine convents could be found, which offered equal opportunities for the education of children, the monks were soon requested to admit also boys not devoted to monastic life. These applications came especially from noble and wealthy families, and were so numerous that it was soon found necessary to provide special rooms, and probably also special courses of instruction, for each class of boys (*scholæ interiores* and *exteriores*). — The instruction in the elementary branches was imparted by a teacher called *scholasticus;* in the larger schools and for higher studies, learned monks, called *magistri*, were appointed, under whose direction other monks, called *seniores*, acted as assistant teachers. — Many convents of the Benedictine nuns had similar schools for girls, though they were not so numerously attended as those of the monks. Sometimes these schools of the convents also admitted boys. With the decay of the Benedictine order these schools declined. Convent education, after the 12th century, did not retain the ascendency which it had formerly enjoyed; and where it was still preferred, it passed to a large extent into the hands of other monastic orders. (See Convent Schools.)

Among the most famous schools of the Benedictines, were Monte Casino, Bobbio, Rome, and Milan, in Italy; Tours, Corbie, Fleury, which at one time had 5,000 students, Clermont, Ferrières, Fontenay, Reims, Aniane, Marmoutier, Lobbes, in France and Belgium; St. Gall, Reichenau, Fulda, Fritzlar, Hersfeld, Mayence, Treves, Prüm, Lorsch, Weissenburg, Ratisbon, Salzburg, Korvei, in Germany and Switzerland. In England, St. Peter's Convent at Canterbury had a wide-spread reputation, through Theodore of Tarsus and his companion Hadrian. The double convent of Wearmouth and Yarrow, which was founded in 673 by Benedict Biscop, gave to western teachers the learned and illustrious Bede. (See BEDE.) York, which owed its celebrity to Egbert and Adelbert, counted among its pupils the celebrated Alcuin. (See ALCUIN.) Though the prominent influence which the Benedictines, at the beginning of the middle age, exercised upon the education of Catholic Europe, was never recovered, they still continue to conduct a number of educational institutions. At present (1876), they have a number of colleges and gymnasia in the United States, in Austria, Switzerland, and several other countries.

BENEKE, Friedrich Eduard, an ingenious German writer on the art of education, was born at Berlin, Febr. 17., 1798. He studied theology and philosophy at the universities of Halle and Berlin, and finally decided to devote himself wholly to philosophy in order to reform it. He became a lecturer (*privatdocent*) on philosophy at the university of Berlin in 1820, and, placing himself wholly upon the stand-point of empiricism and denying the possibility of *a priori* cognitions, at once boldly attacked the system of Hegel who at that time was all-powerful. The Prussian government, in 1822, deprived him of the right of lecturing at the university, because as the minister of public worship, Altenstein, personally explained to him, a philosophy which did not derive everything from the *absolute*, could not be recognized as a philosophy at all. Beneke removed, in 1824, to the university of Göttingen, whence he returned, in 1827, to Berlin, where he was appointed after the death of Hegel, in 1832, extraordinary professor of philosophy. He suddenly disappeared, March 1., 1854, and a year later his corpse was found in the canal at Charlottenburg. It has never been ascertained whether he committed suicide, or whether his death was caused by an accident. Most of the numerous works of Beneke are of a philosophical character; as an educational writer, he became first known, in 1835, by a work, entitled *Theory of Education and Instruction* (*Erziehungs- und Unterrichtslehre*), which made a profound impression among teachers and friends of education. The system of education proposed by him is based exclusively on psychology, and he claims for it the character of a wholly empirical science. He found many enthusiastic admirers, one of whom, Dressler (in Hergang's *Realencyclopädie*, I, p. 264), says of him: All former achievements in the province of pedagogy were surpassed by Beneke. Through him the education of man has gained a character which was formerly unknown — certainty of success. Previous successes were accidental, but the psychology of Beneke has given us a power over nature which does not fall behind the power exercised by physicists and chemists. The number of adherents of this system is small, though the genius of Beneke is universally acknowledged. Among the other educational works of Beneke, one published in 1836, and entitled *Our Universities and what they need,* attracted great attention.

BENEVOLENCE, good-will, general and habitual kindness of disposition in our feelings, not only toward each other, but toward the lower animals, is a trait of character which should receive a careful cultivation in the education of the young. Children, in general, are not naturally benevolent. Their undeveloped sympathies, their active propensities and love of sport, and their proneness to what is called by phrenologists "destructiveness", incline them to acts of selfishness and cruelty. In order to check this tendency, their sensibilities should, as much as possible, be aroused; they should not be subjected to harsh or inconsiderate treatment, and they should not only read and hear stories that awaken their sympathies, but should be made to observe objects of compassion that require their active aid; and they should be incited and encouraged in every possible way to self-sacrifice in relieving the sufferings of others. In their conduct toward each other, they should be habituated to lay aside their resentments, to forgive injuries, to put the kindest and most considerate construction upon the acts of their companions, and to dismiss from their minds all suspicions and jealousies, as well as all distrust that is not based upon indisputable facts. The quarrels of children may for this purpose become the means of wholesome discipline in instruction; since the disputants themselves may be made to feel the desirability of mutual forbearance, and their associates, by being brought in to aid in reconciling them, may be impressed with the beautiful character of the peace-maker. In the treatment of the lower animals by children, there is much occasion for this kind of training; and the skillful teacher will not fail to make use of the numerous incidents of school life to impress this virtue upon the child's character. (See MORAL EDUCATION.)

BENGEL, Johann Albrecht, a celebrated German theologian and educator in Würtemberg, was born in 1687, and died in 1752. He is chiefly famous as a theological writer, being well known as one of the most prominent representatives of German pietism. He was, from 1713 to 1741, a very successful teacher at a theological seminary at Denkendorf, and while there introduced many educational reforms. The course of studies which he drew up for his school, in concert with his colleagues, attracted great attention. From an educational point of view, his writings are valuable as illustrating the peculiar position which pietism occupies in the history of German pedagogy. His life was written by his son-in-law, Ch. Burk.— See also PALMER, *Evangelische Pädagogik.*

BENTLEY, Richard, considered the best classical scholar England has ever produced, was born at Oulton, in Yorkshire, in 1662, and died at Cambridge in 1742. He was educated at Cambridge University, but subsequently, while tutor of the son of Dr. Stillingfleet, he pursued his classical studies at Oxford. His most celebrated work was his *Dissertation on the Epistles of Phalaris,* in which, in controversy with the most eminent scholars and literary men of his time, he proved that the *Epistles* were spurious. "This was," says Holland, "the first great literary war in England;" and Bentley showed such profound scholarship, acute criticism, and masterly logic, that he not only vanquished his opponents, but achieved for himself a reputation throughout Europe. In 1700, he was appointed Master of Trinity College, Cambridge, in which he continued till his death; but his arrogance and rapacity involved him in the most bitter and protracted quarrels and lawsuits, and at one time came near ignominiously depriving him of his position. He published critical editions of many classical authors, of great merit and value, among which his *Horace* was the most elaborate and the most popular. His edition of Milton's *Paradise Lost* (1732) was, however, quite unworthy of his fame. His edition of Homer he did not live to complete. Bentley did a most valuable service not only to classical scholarship, but to historical criticism, the latter of which he established on a new basis. While as an official he was arbitrary, exacting, and severe, in private life he was courteous and amiable. — See T. H. MONK, *Life of Bentley* (1830); HARTLEY COLERIDGE, *Lives of Northern Worthies* (edited by his brother, London, 1852); DE QUINCEY, *Essays on Philosophical Writers,* vol. II. (Boston, 1854.)

BEREA COLLEGE, at Berea, Ky., was founded in 1858. It supplies the means of education to students, both white and colored, male and female. In 1875, it had 14 instructors and 271 students; of the latter, 157 were males and 114 females; 126 white, and 145 colored. Of the colored students, 67 were females. It includes a preparatory and a collegiate department. All the female students are included in a ladies' department, under the special supervision of a lady principal. No separate course of study is arranged for females, but both sexes recite together whenever their studies are the same. There is also a normal department with a special course for teachers; also a commercial course. The college is well supplied with apparatus and has a library of nearly 2,000 volumes. The college buildings are spacious and elegant, particularly the Ladies' Hall, erected in 1873. Rev. E. H. Fairchild (1875) is the president of the institution. The annual tuition fee is $10.

BERNHARDI, August Ferdinand, one of the most eminent schoolmen of Prussia in the beginning of this century, was born in 1769, in Berlin, and died in 1820. He became a teacher in the *Friedrich Werder Gymnasium,* in Berlin, in 1791, and director of the same institution in 1808. In the same year, he gave Pestalozzi's method of teaching arithmetic a trial, enlarged the exercises, and finally introduced it into his school. His success as director of the gymnasium was remarkable, the number of pupils increasing from 97 in 1808, to 460 in 1812. Many of the most distinguished men of Prussia proceeded from his school. He found no time for the publication of large works; but some of his essays and lectures have been published under the title of *A view of the Organization of the Learned Schools.* The programmes edited by him in 1809, 1810, and 1811, give his views upon the *Number, importance, and relation of the subjects taught in a gymnasium,* also on the *First principles of method,* and on the *First principles of discipline.* In later essays, published from 1814 to 1816, he gave a fuller exposition of the proper course of studies for a gymnasium; and the ideas which he developed in regard to this subject, have gained for him the reputation of being one of the best writers on the German gymnasia.

BETHANY COLLEGE, at Bethany, W. Va., was established in 1841 by the Rev. Alexander Campbell, the founder of the sect of Baptists, called Disciples. This institution had, in 1873, a corps of 9 instructors, and 123 students in the collegiate department. Its productive funds amount to $60,000, and the value of the college property, — grounds, buildings, etc., is estimated at $250,000. The president of the college is (1876) W. K. Pendleton.

BETHEL COLLEGE, at Russelville, Ky., was founded by the Bethel Baptist Association of South-western Kentucky, in 1849, as a high school; and, in 1856, it was chartered as a college. Its successive presidents have been B. T. Blewitt to 1861; Rev. Geo. Hunt, from 1863 to 1864; Prof. J. W. Rust, from 1864 to 1868; Noah K. Davis, from 1868 to 1873. The discipline of the college is now under the direction of Leslie Waggener, as chairman of the faculty. In the winter of 1861—2, the college buildings were used as a hospital by the Confederate forces lying at Bowling Green. The endowment funds amount (1875) to $85,000, besides which it has a beneficiary fund of about $8,000, and its real estate, in addition to the college buildings and grounds, is valued at $85,000. It contains schools of Latin, Greek, mathematics, natural science, English, mental science, biblical knowledge, and theology, in which, in 1874—5, there were about 350 students; of whom 97 were in the collegiate department. The school of English is very complete, affording to its students a knowledge of the Anglo-Saxon language, as a basis for a critical knowledge of English grammar and literature. The tuition fee is $60 per annum.

BIBLE (Gr. *βιβλία,* books), the sacred scriptures of the Christians. All churches which recognize Christ as their founder, whatever may be their denomination, agree in regarding the

Bible as the divinely inspired book which contains the tenets of Christian belief and of Christian ethics. The Bible is divided into two parts, called the *Old* and the *New Testament.* The former is regarded as *holy writ,* not only by Christians, but also by the Jews. There is not an entire agreement in regard to the number of books constituting the Old Testament. Several books are regarded by the Catholic Church as belonging to, and partaking of, the inspired character of the Scriptures, which Protestants generally regard as a class of works highly venerable and useful, but not of divine origin. The Catholic Church calls these books deuterocanonical, the Protestants apocryphal, or, collectively, the *Apocrypha.* The New Testament is the same in the Catholic Church as in Protestant churches; but one Christian sect, the Abyssinian Church, recognizes, in addition to the books accepted by both Catholics and Protestants, a number of others as a part of the New Testament.

Catholics and Protestants, though accepting the same books as the sources of divine truth, differ widely in the interpretation of their contents. Most of the biblical Protestants regard the Bible as the only source of Christian faith, and maintain that, whatever differences of opinion may exist in regard to some particular doctrines, the great fundamental truths of Christianity are set forth in it so clearly, as to supersede fully the need of any other standard of faith. The Catholic Church, on the other hand, holds that the Bible was not given by God to man to be the only guide for the formation of his religious belief, but that, for that purpose, an infallible church was instituted, whose office it is to explain to the faithful the true meaning of the Bible.

From the different position which these two large denominations of Christians assume in regard to the Bible, it follows that they must teach a different way of using it. Thus, the Protestant churches consider it a matter of prime importance that every child should become acquainted with the Bible as the only infallible source of the pure word of God, and should learn, as soon as possible, to read and understand it; while the Catholic Church enjoins upon its members to keep constantly in mind, in reading the Bible, that only the infallible church possesses the key to its true meaning. The Protestant churches earnestly desire that the Bible should be placed in the hands of every Christian; and they have, therefore, founded in all Protestant countries *Bible Societies,* designed to carry out this object, and thus have already fully succeeded in making the Bible the most widely circulated book in the world. The Catholic Church prefers the use of annotated Bibles, or of selections from the Bible, to that of the Scriptures without note and comment. When, in the thirteenth century, the Albigenses translated the Bible into their vernacular languages, and referred their members to the text of the Bible as contradicting the teachings of the church, the synod of Toulouse, in 1229, forbade laymen to read the Bible in the vernacular language; and, in modern times, the efforts of the Bible societies have been repeatedly condemned by the popes. In Protestant countries, the reading of the Bible has been a very prominent agent in the development of public education. The Bible having become, through Luther and other Reformers of the sixteenth century, the principal book for the church and the home-circle, the instruction of children in this book continued for a long time to be the chief object of popular education. Children were taught to read in order that they might be able to peruse the Bible; and instruction in the dogmatic tenets of the Church, as well as instruction in history, geography, and other branches, was secondary to the reading of the Scriptures. In process of time, the relation of Bible reading to other branches of education became greatly modified; but, wherever public schools still have a distinctively Protestant character, the reading of the Bible is retained as a special branch of instruction. Protestant educators differ in regard to the question, whether it is preferable to place the entire Bible, or only editions specially abridged for the use of children (*school-bibles*), into the hands of the pupils. Both views have found able advocates; but the use of the entire Bible has thus far been favored by the legislation of most of the Protestant states of Europe. On the other hand, educators have generally agreed in recommending to teachers not to require the entire Bible to be read consecutively by the pupils; but to leave out those portions which are either inappropriate or too difficult for children.

The Catholic Church is opposed to the introduction of the Bible without note or comment into schools, and substitutes for it the use of biblical histories and selections from the Bible. Recent Catholic works on education express the wish, that to the reading of suitable selections from the Bible greater prominence should be given than has heretofore been the case. See Rolfus & Pfister, *Real-Encyclopädie des Erziehungs- und Unterrichtswesens nach katholischen Principien,* art. *Bibel.*

Bible Question.—In the United States, the public schools are of an undenominational character, being intended to receive children of all kinds of religious belief or unbelief. The question whether the reading of the Bible is to be retained in the public schools, has been and still is the subject of animated discussion and agitation. The decision of this question is mostly left to the local boards of education, which may prescribe, allow, or forbid the reading of the Bible. The legislation of several of the states of the Union provides, however, that no ordinance shall be passed by any local board of education forbidding the use of the Bible. The majority of the Protestant churches still favor the reading of the Bible, though some of the most prominent clergymen have, of late, taken the ground that it would be unjust to request the children of Catholics, Jews, or Non-Christians to take part in religious exercises to which their parents object. The Catholics and Jews, together with all the opponents of Christianity, generally demand the exclusion of the Bible from the schools. In the city of Cincinnati, a resolution by the board of education forbidding the reading of the Bible in the public schools, led, in 1869, to a legal contest which lasted four years. The superior court of Cincinnati, in 1870, decided against the board of education; but the supreme court of Ohio, in June 1873, reversed this judgment, and sustained the Cincinnati board of education. The school board of Chicago, in 1875, followed the example of Cincinnati, and forbade the reading of the Bible in the public schools. The question has also been vehemently agitated in the city of New York.—See *The Bible in the Public Schools; Arguments in the case of John D. Minor et al. versus the Board of Education of the City of Cincinnati et al.* (Cincinnati, 1870); Bourne, *History of the Public School Society* (N. Y., 1870); Boese, *Public Education in the City of New York* (New York, 1869); T. H. Huxley, *The School Boards*, in *Critiques and Addresses* (London, and N. Y., 1873); Grimke, *Use of the Bible in Common Education*, in *Amer. Annals of Education*, vol. III. (1833), and *The Bible as a Class Book*, in *Addresses* (1831.)

BIBLE HISTORY, or **Biblical History.** The connected history of the events narrated in the Bible is in many schools, both Protestant and Catholic, a part of the prescribed religious instruction. The method of teaching it greatly varies according to the age of the scholars. While children of the primary grade are taught only the most notable events of sacred history, in language adapted to their age, more advanced students are introduced into a full understanding of the Bible. In the compilation of text-books for this study, the authors have sometimes endeavored to give the whole narrative as much as possible in the words of the Bible, so as to make the book, in fact, an abridgment of the Bible. Others have deemed it better to pay less attention to retaining the words of the Bible, and to look, in the first place, to making the subject as interesting, attractive, and intelligible to children as possible. Germany, where Biblical history (*Biblische Geschichte*) is generally adopted as a part of the course of instruction in public schools of various grades, has a very extensive literature on the subject, including many manuals for teachers. Of scientific theology, Bible history forms an essential part, and is divided, like the Bible itself, into two sections, the history of the Old, and the history of the New Testament. It forms the connecting link between exegetical and historical theology, explaining, on the one hand, the contents of the Bible, and, on the other hand, treating and elucidating them the same as any other historical subject.

Bible history may also be viewed as a history of the volume containing the sacred writings of the Christian church. In this sense, it treats of the origin of the several books composing the Bible, and of their collection in the canon. The works treating of this subject are generally entitled *Introductions to the Bible;* but a number of prominent theologians, rejecting this title as unsuitable, have treated of this subject under the heading, *History of the Bible*, or *History of the Biblical Revelation.* The most noted works of this class are: Reuss, *Die Geschichte der heil. Schriften des N. T.* (1853, 3d. edit. 1860); Gericke, *Gesammtgeschichte des N. T.* (Leip., 1854): Haneberg, *Versuch einer Geschichte der biblischen Offenbarung* (Ratisbon, 1850).

BIRCH, as the name of the tree from which rods or twigs were formerly obtained for the infliction of corporal punishment, is often used as denoting this species of punishment; and the tree is frequently referred to in connection with school-keeping in the olden time. Shakespeare speaks of the "threatening twigs of birch"; and Shenstone, in *The Schoolmistress*, thus refers to the tree and its connection with school-management:

> "And all in sight doth rise a birchen tree,
> Which Learning near her little dome did stow,
> Whilom a twig of small regard to see,
> Though now so wide its waving branches flow,
> And work the simple vassals mickle woe;
> For not a wind might curl the leaves that blew,
> But their limbs shudder'd, and their pulse beat low,
> And as they look'd, they found their horror grew,
> And shaped it into rods, and tingled at the view."

Doubtless, the toughness and elasticity of the twigs of the birch made them, before the introduction of the rattan, very useful implements for the purpose of school chastisement. (See Corporal Punishment.)

BLACKBOARD, an important piece of school apparatus now in use in all classes and grades of schools. It is generally constructed of wood, and is either attached to the wall of the room, or made to stand on an easel or revolve in a frame. Instead of blackboards, wall slates are now very frequently used, which, although much more expensive, are to be preferred on account of their durability. Sometimes, a portion of the wall itself is painted black, or covered with *liquid slating*, for this purpose; and at the present time a kind of *slated cloth* is manufactured, which being attached to the wall answers every purpose of a blackboard.

The blackboard for the use of the teacher in giving his instruction or explanations to the whole school or class, should, for the sake of convenience, be placed near his desk and in front of the pupils. It is a great advantage also to have sufficient blackboard surface to admit of its use by all the pupils of a class, or by sections of it. This is especially desirable in higher instruction; but even in elementary district schools will be found to be quite desirable. Some of the pupils of a school can be employed in writing, drawing, or working out arithmetical problems on the blackboards, while others are engaged in oral recitation. There is scarcely any branch of instruction, or any kind of teaching, from the object lesson of the primary school to the lecture of the college professor, in which the use of the blackboard is not found to be almost indispensable. In teaching mathematics, it has an especial value. Scarcely a teacher, at the present day, in the most remote country school-house, would think of teaching arithmetic without a blackboard. But it is a most important aid also in teaching writing, drawing, geography, grammar, composition, history, and music; indeed, in every thing that admits of, or requires, an ocular demonstration addressed to a large number of pupils. Blackboard drawing can be made very instructive and interesting, particularly when crayons of different colors are used. In some schools this kind of drawing is carried to great perfection. Map-drawing, or rapid map-sketching, on the blackboard, is also very useful in teaching geography. Recitations on this subject may be conducted by this means. One of the pupils draws the outline of the state or country which is the subject of the lesson; another fills in the rivers; the next, the cities, etc., till the map is complete. As the study of maps depends so largely on the proper and attentive use of the eye, this method of blackboard instruction cannot fail to be quite effective.

Blackboard illustration will also prove very effective in the oral teaching, by a series of lessons or lectures, of abstract subjects other than mathematics, such as logic, metaphysics, mental and moral philosophy, etc. By this means the divisions and subdivisions of the subject, with their exact logical relations, are presented to the mind through the eye, and a much stronger, clearer and more durable impression is thus made. For an excellent example of this kind of teaching, see Mark Hopkins, *An Outline Study of Man* (New York, 1876). See also W. A. Alcott, *Slate and Blackboard Exercises;* Wickersham, *School Economy* (Philadelphia, 1868).

BLACKBURN UNIVERSITY, at Carlinville, Ill., was organized in 1867, by the Presbyterians. It has a preparatory, a collegiate, an eclectic, a scientific, and a theological course, to which both sexes are admitted on equal terms, and receive the same honorary degrees on the completion of the course pursued. There were, in 1873, 257 students, of whom 141 belonged to the preparatory and 116 to the collegiate department; and the corps of instructors numbered 13, exclusive of 4 endowed professorships. The value of its grounds, buildings, etc. is $90,000; and its productive endowment $90,000. The president of the institution is (1876) Rev. J. W. Barby, D.D. The annual tuition fee is $25.

BLIND, Education of the. The blind constitute, in every country, a numerous class of afflicted persons for whom *special instruction* is needed. Blindness, or loss of sight, is either congenital, or is caused by accident or disease occurring after birth. The statistics of different countries show that the number of blind persons in all ages has been quite large; and, in modern times, this has led to considerable effort with the view to afford to these unfortunates the means of education, not only for their mental improvement, but to train them to independent support, so that they may be lifted out of the pauper class, and be enabled to earn a respectable livelihood.

There is a great diversity in the number of blind persons as compared with the population in different countries. Thus, according to the census of 1870, the total number of blind persons in the United States was 20,320, or 1 in 1900 of the population. In England and Wales, the proportion is reported as 1 to 1,037; in France, 1 to 938; in Greece and Turkey, 1 to 800; in Iceland, 1 to 300; and in Egypt, 1 to 200. In all countries, the number of males among the blind exceeds that of the females; and, in the United States, about one half of the blind are over 48 years of age. The proportion of those born blind to those who become so after birth is quite small.

The ancients appear to have had a certain degree of reverence for the blind, to some of whom they attributed the gift of prophecy; but it was not until the Middle Ages that any provision was made for their care and protection; and it was reserved for modern times to afford them the means of education. The *Hospice des Quinze-Vingts* (Hospital for the 300), in Paris, founded by Louis IX. in 1260, is supposed to be the first public asylum established for the blind, the object of the French king being to provide a retreat for the soldiers of his army who had lost their eyes in Egypt, during the crusade which he led against the Moslems. This institution still exists, and has an annual income of $80,000. It is, however, as it was originally, only an asylum, affording no means of instruction; indeed, it was not until the 16th century that any processes were devised for this purpose. But little was accomplished in this direction till 1784, when Valentin Haüy, incited by the example of the abbé de l'Epée in connection with the education of deaf-mutes, commenced his exertions to find an efficient method for teaching the blind. Having succeeded with a few individuals, by the use of raised letters, he opened a small school, which in 1791 was taken under the patronage of the government, and afterward became the *Royal Institution for the Blind.* He subsequently founded institutions for the blind at St. Petersburg and at Berlin. About the same time, similar institutions were established in England and Scotland; and, after the example of that at Berlin, in many of the cities of Germany. There are now 16 public institutions for the blind in England, the oldest of which is the *School for the Blind,* in Liverpool, founded in 1791; 4 in Scotland, of which the *Asylum for Industrious Blind,* in Edinburgh, was founded in 1793; and 4 in Ireland, the oldest being the *Richmond National Institution,* in Dublin, founded in 1810. In London, 23 private institutions have been established by charitable endowments. France has 13 schools for the blind, besides the *Hospice des Quinze-Vingts.* There are between thirty and forty institutions for the blind in Germany, of which the oldest is that commenced at Berlin, in 1806, by Haüy. The Netherlands, Belgium, and Switzerland have similar institutions. In the Netherlands they are supported entirely by voluntary subscription. In Belgium, an asylum for the blind is said to have been founded at Bruges in 1305; but the first school was opened at Brussels in 1833. In Spain, there are two institutions for the blind, one at Madrid, and the other at Barcelona. There are also institutions of the kind in Italy, and a school for the instruction of the blind at Rio Janeiro, commenced in 1854.

The first institution for the blind in the United States—the Perkins Institution at Boston, was chartered in 1829, but not opened till August, 1832. It was named after Col. Thomas H. Perkins, who gave his mansion for its accommodation. It was under the direction of Dr. Samuel G. Howe until his death in 1876. The New York Institution for the Blind was opened March 15., 1832. The following table of statistics has been compiled from the Report of the U. S. Bureau of Education for 1875.

Institutions for the Blind in the United States.

NAME.	LOCATION	Date of foundation	Control	No. of pupils admitted since opening	No. of instructors and employés	Amount of appropriation, state & mun.	Value of grounds, buildings, etc.
Inst. for Deaf and Dumb, and Blind	Talladega, Ala.	1866	State	40	2	$18,000	$40,000
Inst. for Education of the Blind	Little Rock, Ark.	1859	State	107	13	7,703	30,000
Inst. for Deaf and Dumb, and Blind	Oakland, Cal.	1860	State	84	3	36,000	100,000
Georgia Academy for the Blind	Macon, Ga.	1852	Corporation.	144	11	13,000	75,000
Inst. for the Education of the Blind	Jacksonville, Ill.	1849	State	506	29	31,000	166,000
Inst. for the Education of the Blind	Indianapolis, Ind.	1847	State	521	25	32,500	525,000
Iowa College for the Blind	Vinton, Iowa	1853	State	317	28	26,000	500,000
Kansas State Blind Asylum	Wyandotte, Kan.	1867	State	65	11	9,000	40,000
Asylum for the Education of the Blind	Louisville, Ky.	1842	State	358	20	19,380	100,000
Inst. for the Education of the Blind	Baton Rouge, La.	1871	State	63	6	8,000	250,000
Inst. for the Instruction of the Blind	Baltimore, Md.	1853	Corporation.	173	16	22,000	255,000
Inst. for Colored Blind and Deaf-M.	Baltimore, Md.	1872	Corporation.	18	7	10,000	20,000
Perkins Inst. and Mass. Asylum	Boston, Mass.	1832	Corporation.	889	48	30,000	354,715
Inst. for Deaf and Dumb, and Blind	Flint, Mich.	1853	Trustees	—	—	51,872	375,315
Inst. for Deaf and Dumb, and Blind	Faribault, Minn.	1866	State	32	4	5,000	25,000
Institution for the Blind	Jackson, Miss.	1852	State	275	6	10,000	10,000
Inst. for the Education of the Blind	St. Louis, Mo.	1851	State	338	23	21,000	200,000
State Institution for the Blind	Batavia, N. Y.	1868	State	29	3	25,000	70,000
N. Y. Institution for the Blind	New York, N. Y.	1831	Corporation.	1,172	60	62,500	324,500
Inst. for the Deaf, Dumb, and Blind	Raleigh, N. C.	1851	State	150	6	40,000	50,000
Inst. for Education of the Blind	Columbus, O.	1837	State	868	50	60,785	600,000
Oregon Institute for the Blind	Salem, Oreg.	1873	State	12	3	2,000	—
Inst. for Instruction of the Blind	Philadelphia, Pa.	1833	Corporation.	885	63	39,000	201,000
Inst. for Deaf and Dumb, and Blind.	Spartanburg, S. C.	1849	State	—	—	—	60,000
Tennessee School for the Blind	Nashville, Tenn.	1844	Corporation.	175	9	15,000	80,000
Texas Institute for the Blind	Austin, Tex.	1856	State	—	10	10,650	45,000
Inst. for Deaf and Dumb, and Blind	Staunton, Va	1839	State	208	5	40,000	175,000
Inst. for Deaf and Dumb, and Blind	Romney, W. Va.	1870	State	29	3	25,000	70,000
Inst. for Education of the Blind	Janesville, Wis.	1850	State	236	21	83,000	85,000

From the above table it will be seen that there are 29 institutions, either exclusively for the education of the blind, or for that of the blind and the deaf and dumb; and that, since 1832, when the New York and Boston institutions went into operation, about 7,500 blind persons have received instruction: also, that, in 1874, the amount of state and municipal appropriations for the support of these institutions was upward of $740,000, and that the amount of money invested in grounds, buildings, etc., belonging to them, is more than $4,500,000. It is an interesting fact also that 22 of these establishments are purely state institutions.

Methods of Instruction.—An institution for the blind should comprehend three schools, or departments: namely, the *literary department*, or school proper, the *school of music*, and the *industrial school*. This organization is essential, in order to give the general instruction which every child needs, and also such special training as blindness renders necessary. In the literary department, the course of instruction includes the branches which are usually taught, in the common and high schools, to the seeing; the principal difference being in the apparatus and methods of teaching employed. Instead of the blackboard, wall-maps, slate and pencil, and pen and ink, there are employed topographical maps, embossed books, slates with movable type to represent numerals and algebraic signs, geometrical cards with figures in relief, metal tablets for tangible writing, according to the New York point system,—also for the New York system of alphabetic writing and musical notation.

The first efforts to instruct the blind found expression in an attempt to teach them how to read by means of the fingers. Many alphabets in relief have been devised, but all may be included in two classes: (1) Those composed of lines, forming the ordinary capital or small letters in their original form, or in some modification of it; (2) Those in which the letters are formed of raised points, or dots, in no respect resembling the ordinary letters, and called the *point alphabet*. These can be both printed and written in a tangible form. The use of line letter text-books in classes is very limited, from the fact that a classification according to reading ability differs entirely from that based upon mental capacity and attainments. For this reason, the instruction in each of the departments is chiefly oral.

The instruction of the blind in music is of paramount importance. It develops and refines the taste, promotes general culture, affords constant and inexhaustible enjoyment, as well as the means of respectable support. The musical course of instruction comprises voice lessons, part and chorus singing, lessons and practice in piano and organ playing, and a thorough course of teaching and training in the tuning of pianos. Blind organists, teachers of the piano, and piano-tuners may be found in all parts of the country. One of the best tuners employed by Steinway & Sons, the celebrated piano-forte makers of New York, is totally blind. Heretofore, this department of instruction has been exclusively oral; but there is now in press a piano instruction book, in the *New York point system of musical notation*, by which the blind pupil may learn by finger-reading from the printed or written page.

The importance of *mechanical training*, in comparison with other branches of instruction, in the education of the blind, is a matter of vital interest. Some are of opinion that instruction in trades is of the first importance; others give it simply a place co-ordinate with other departments of teaching; while still others attach the chief importance to such branches as lead to those employments in which skilled manual operations are required. The latter position cannot be maintained, since in all such operations the guidance of the eye is more or less essential to perfection and dexterity of manipulation; from which fact it is obvious that purely mechanical pursuits are not necessarily the best adapted to those who are deprived of sight. This being so, it is a great mistake to rest the education of the young blind, and the prospects of their future usefulness and welfare, exclusively upon such employments. The true plan is to give manual pursuits such a place in the scheme of education as is required by the conditions which blindness imposes. The training of the young blind in one or more industrial occupations should be rigidly enforced, not because such employments furnish the only, the best, or the most available means of future support, but because such training and discipline of the head and the hand in work are necessary to the proper education of every pupil. Thus, manual training is made the means to an end, but not the end itself. Male pupils are taught to make brooms, mats, mattresses, and brushes; to put cane bottoms into chairs; and to perform other handicraft labors. Female pupils are taught to sew, knit, and crochet, to use the sewing and knitting machine, and to work a great variety of articles useful and ornamental.

Government and Discipline.—From necessity, the pupils board and lodge at the institution; and, consequently, the government is twofold: (1) that of a large and well-ordered family; and (2) that of a thoroughly organized school. The rules are such only as are necessary to secure the easy and effective performance of the many kinds of work which are carried on in the different departments. In all well-regulated schools, the male and female pupils are effectually separated except during the hours of instruction, and all communication is prohibited. The co-education of the sexes is common to all schools for the blind in this country, except those of Boston and Philadelphia. The institutions are not denominational, each pupil being permitted to attend the particular church and Sunday school which are chosen by parents, guardians, or friends. Discipline is maintained in the New York, Boston, and some other schools, entirely by moral means, no recourse being ever had to corporal punishment.

Systems of Printing and Notation.—Tangible letters were first constructed in the 18th century; afterward, the noted blind pianist, Theresa von Paradis, of Vienna, represented musical notes with pins on a cushion, from which her friend Haüy conceived the idea of embossing letters on paper. The first book in relief printing was, it is believed, Haüy's *Essai sur l'éducation des aveugles* (Paris, 1786). The first book in English printed in relief was issued by James Gall, of Edinburgh, in 1827; and two years afterward, he introduced relief printing in London. His alphabet consisted of the ordinary English lower-case letters reduced to straight lines and angles. In 1832, Dr. Fry obtained the prize offered by the Society of Arts in Scotland for the best alphabet and method of printing for the blind. This alphabet consisted of the Roman capitals simplified, and was nearly the same as that used formerly in Philadelphia. A stenographic alphabet, invented by Mr. Lucas, of Bristol, England, is used in some of the schools of that country. A few years later, a phonetic alphabet was invented by Mr. Frere and introduced into some of the English schools. In 1847, a simplified alphabet, the letters of which consisted of lines, was invented by Mr. Moon. This alphabet has been used in many schools. The alphabet forming the system of tangible point-printing, was, about 1839, introduced into the imperial institution for the blind in Paris, by M. Braille; and has been extensively used in the schools of France, Switzerland, and Belgium. A system of point writing and printing has been devised by William B. Wait, superintendent of the New York Institution for the Blind, and is now used in nearly all the American institutions. This system has also been applied to musical notation. Systems of notation in raised characters have also been invented by Rousseau, Guadet, and Mahoney. See *Reports of U. S. Commissioner of Education* for 1872, -3, and -4; *Proceedings of the Association of American Instructors of the Blind* (W. B. Wait, Cor. Sec.); also the publications of the American Bible Society, and of the American Printing-House for the Blind.

BLOCHMANN, Karl Justus, an eminent German educator and pupil of Pestalozzi, the founder and for many years the director of a celebrated educational institute, called after him *Blochmann'sches Institut*, was born in 1786, and died in 1855. He studied, from 1805 to 1809, at the university of Leipsic, theology and pedagogy, and at the same time endeavored to acquire a practical experience as a teacher. In 1809, he went to Switzerland and became an instructor in Pestalozzi's school, where he remained eight years. He then returned to Germany, and became vice-director of the *Friedrich August School*, in Dresden. In order to be fully able to carry out his pedagogical views, he opened his own school in 1824, which was united with the *Vitzthum Gymnasium* in 1829; and he received from the Saxon government the license, very rarely granted to private institutions, to give to its pupils certificates of preparation for the university. He retained control of these two schools until 1851, when he transferred their administration to his son-in-law, Dr. Bezzenberger. A large number of prominent Germans, including several princes, have received their education in this institution, which ceased to exist Oct. 16., 1861. Though a pupil and admirer of Pestalozzi, Blochmann differed from his master in the importance which he assigned to the religious element in education. While Pestalozzi strongly sympathized with the liberal movements in Protestant theology, Blochmann was firmly devoted to the strictest orthodoxy.

BLUE-COAT SCHOOL. See Christ's Hospital.

BOARD OF EDUCATION. See School Board.

BOARDING-SCHOOL, a school in which the pupils receive board and lodging as well as instruction. Boarding-schools are generally the property of private individuals; but sometimes they belong to associations or religious denominations. Their management is independent of any control by the state. In some countries, the government does not allow any one to keep a boarding or any other private school, who does not hold a teacher's license; in others, as in the United States, the establishment of private schools is entirely free. The demand for schools of this kind appears to be, in most countries, very extensive. In small towns and in country districts, the public school frequently appears to educated parents as not fitted for the instruction of their children; partly, on account of the unpleasant associations to which the children are exposed, partly, because the course of study appears to be insufficient. Even in large towns and cities where there is no want of good public schools, a large number of parents are found who prefer boarding-schools to the best public schools. Fashion has sometimes a great deal to do with the attendance of pupils at boarding-schools; and a school that once has a well-established reputation in wealthy circles of society, may be expected to receive numbers of pupils for no other reason than because it is fashionable. A consideration which induces many parents of even moderate means to send their children to boarding-schools, is the expectation that, in such schools, more attention can be given to individual teaching than in public schools, and that especially children of small intellectual capacities, as well as those who, in consequence of the delicacy of their health, are less regular in their studies, will receive special attention. In other families, it is not the expectation of a superior method of instruction which causes children to be sent to boarding-schools, but the belief that there they will be under better and more constant educational influence than the paternal roof can afford them.

As boarding-schools are entirely independent of public school boards, there is the greatest possible variety in their courses of instruction. Moreover, since the financial success of these institutions depends upon the number of pupils secured, the proprietors generally find it necessary not only to receive pupils at any time of the year, but to provide special instruction for every pupil, of whatever grade or capacity. The inevitable consequence of this is, that the classification, in the majority of these schools, is unsatisfactory. Very great danger, moreover, arises from the fact that a large number of children of evil habits are often received into such institutions, the parents hoping that the teachers of these schools will be more successful in reforming such pupils than public-school teachers. The greatness of the danger which an association with children of this class involves, for all the pupils of the institution, cannot be overestimated, and is certainly not sufficiently appreciated by many of those who have the charge of boarding-schools. On the other hand, however, it has been strongly and justly urged that instructors of superior qualifications often find in this class of schools an excellent and, it may be, the only opportunity of turning their peculiar talents to the use of mankind. Many of the greatest educators that ever lived, would never have been able to test their theories practically, if they had not been at the head of private boarding institutions. The boarding-school undoubtedly offers to educational reformers a grand field of usefulness, and the more the public-school system suffers in any particular place from the incompetency of school boards, or the more, in large cities, the standard of the public schools is depressed, the more strongly will the demand for private and boarding schools make itself felt. Nearly all boarding-schools also admit pupils who attend only for instruction (*day-scholars*); and very commonly they also provide board for children of resident parents (*day-boarders*).

BOLIVIA, a republic of South America, having an area of 500,880 sq. m., and a population, in 1865, of 1,831,585, exclusive of about 250,000 savage Indians. The civilized population consists of native whites, for the most part descendants of the Spanish settlers, mestizos or Cholos (mixed white and Indian), mulattoes, zambos (mixed Indian and negro), and Indians in a domesticated state. About three-fourths of the total population is of Indian descent. Nearly the entire population of the country belongs to the Roman Catholic Church. The exercise of other religious denominations is not prohibited; but unrestricted toleration cannot be said to exist in Bolivia. In a concordat concluded with the Pope in 1851, the Bolivian government promised to support missions among the savage tribes, but a considerable number of them still remain pagan and uncivilized. The national language is the Spanish, but several Indian tribes, especially the Aymarás and the Quichuas, continue to speak their own language.

The territory of Bolivia, after its conquest by the Spaniards, formed a part of the viceroyalty of Peru till 1780, when it was united under the name of Charcas with the new viceroyalty of La Plata. The declaration of independence and the establishment of the republic of Bolivia took place in 1825. Since then, the country has been, almost without interruption, a prey to civil wars.

The condition of education is as yet very unsatisfactory. There is a special minister of public instruction, under whom the chiefs of the three universities of Chuquisaca (Sucre), La Paz, and Cochabamba administer the educational affairs of the country. The university of Chuquisaca, named after St. Francis Xavier, and founded by the Jesuits, was reformed in 1845 and endowed with faculties of law and medicine. It possesses an excellent library. The archiepiscopal seminary is devoted to educating priests, but its pupils are at liberty to prepare for any other vocation. The subjects taught in the seminary comprise Latin, mathematics, physics, philosophy (logic, ethics, and metaphysics), theology, and civil and ecclesiastical law. There is also in Chuquisaca a high school, called *Colegio de Junin*, in which grammar, mathematics, mechanics, logic, and ethics are taught. The universities of La Paz and Cochabamba educate lawyers almost exclusively. There is, however, also a medical school at La Paz and a *colegio superior de ciencias y artes* in La Paz, and Cochabamba. In the entire republic, there are 24 similar *colegios*, of which 8 are *colegios de ciencias* with about 1070 pupils, and 16 *colegios de artes* (a kind of real-schools). There were, in 1846, only 4 female institutions of a higher grade, with 68 pupils. The number of primary schools, public and private, according to the latest reports, is about 800, with 21,000 pupils. The school-books are to a large extent translations from the French. — See SCHMID, *Real-Encyclop.*, art. *Südamerica*; D'ORBIGNY, *Descripcion geográfica, histórica, y estadística de Bolivia* (2 vols., Paris, 1835).

BONET, Juan Pablo, one of the earliest instructors of deaf-mutes, was born in Aragon, in the latter part of the 16th century. Though Pedro Ponce, a Spanish Benedictine monk, who lived about fifty years before Bonet, had employed a method of teaching the deaf and dumb by means of an alphabet of manual signs, to Bonet is attributed the credit of originating a similar method, since he could have had no information of Ponce's invention. His plan is fully explained in his work, *Reduccion de las letras y artes para enseñar á hablar á los mudos* (Madrid, 1620), which was the first formal treatise on this branch of special instruction. He used the articulation system to some extent, but also made use of a manual alphabet, which was almost exactly the same as the single-hand alphabet now in use. Bonet was secretary to the constable of Castile, and taught a brother of his patron, who had become deaf when only two years of age. This young man was introduced to prince Charles of England during the visit of the latter to Spain, in 1623; and it was stated by Sir Kenelm Digby, one of the prince's escort, that he could not only understand an ordinary conversation, but could himself speak with remarkable distinctness. (See DEAF-MUTES.)

BONNYCASTLE, John, an eminent English teacher and mathematician, and the author of many excellent elementary works in various departments of mathematics, was born at Whitechurch, England, and died at Woolwich, in 1821. He was for more than forty years a professor of mathematics at the Royal Academy at Woolwich. His chief publications were *Introduction to Mathematics* (1782), *Elements of Geometry* (1789), *Treatise on Trigonometry* (1806), and *Elements of Algebra* (1813). The last of these works has been highly commended, and extensively used both in the United States and in England. He also published the *History of Mathematics*, a translation of Bossut's *Essai sur l'histoire générale des Mathématiques* (Paris, 1810).

BOOK-KEEPING, a system of recording the transactions of a business so as to exhibit, in a plain and comprehensive manner, its condition and progress. The usual method of such a record comprises (1) a history of the transactions at the date and in the order of their occurrence, in a book, called the *day-book*, and (2) the classifying of results in a book called the *ledger*. This classification consists in arranging upon opposite sides of separate statements, or *accounts*, all items of purchase, sale, receipt, expenditure, investment, withdrawal, production, cost, etc., which, in any way, affect the business. The accounts taken together should thus be adequate to express all that one may need to know of the progress of the business and its condition at any time. The simplest form of record, by day-book and ledger only, here explained, is applicable merely to a very limited business. In the more extended and complicated enterprises, various concurrent or auxiliary books are required, their number and character depending upon the nature and peculiar operations of the business. In even the simplest kinds of book-keeping, it is customary to use an intermediate book between the day-book and ledger, called the *journal*, the office of which is to state, or separate, each transaction so as to simplify its transfer to the ledger.

The only competent system of book-keeping is that known as *double entry*, so called from the fact that the complete record of any transaction requires at least two entries in the ledger—one on the debit or debtor side of some account, and one on the credit or creditor side of some other account. The terms *debit* and *credit* (meaning *debtor* and *creditor*, and usually marked *Dr.* and *Cr.*) are, for the most part, used arbitrarily. They are really significant only when applied to personal accounts; but their uniform application to all accounts is a matter of great convenience. The charm and utility of the double-entry system consist in the philosophical adjustment of mathematical facts to the most exacting requirements of finance, and in the tests afforded of the correctness of the work at any point. The simple principles underlying the system may be succinctly stated thus: (1) All financial resources, or items of wealth, are measurable by the money standard; (2) The sum of all the resources of a concern, thus measured, less the sum of all its liabilities, is its real or present worth; (3) All increase or diminution in wealth comes from one of two sources; namely, the receiving of more or less for an article than its cost, or the appreciation or depreciation of the value of an article while in possession; (4) The immediate result of all gains or losses is the adding to, or taking from, the net worth of the concern; and, consequently, the net gain or net loss of a business during any specified time must agree with the increase or diminution of its net worth for the same period. The foregoing propositions may be said to be self-evident facts; but they are important facts nevertheless, and such as any competent presentment of business affairs must recognize and enforce; and this is just what double-entry book-keeping does.

The science, or philosophy, of the system is shown in the *ledger*, which, as before stated, consists of *accounts*. An account is a collection of homogeneous items pertaining to some part of the business, such as the receipt and disbursement of money (*cash*), the purchase and sale of goods, the issue and redemption of notes, the incurring and liquidating of personal indebtedness, etc. All accounts are alike in their structure, each having a title, more or less significant, and two sides, with the items on one side exactly opposite in effect to those on the other; and, like *plus* and *minus* quantities, each canceling the other to the extent of the lesser side, the preponderance, or excess, of either side being the true showing and significance of the account. Thus, the debit or left-hand side of the *cash* account contains the items of cash *received*; and the credit or right-hand side, the items of cash *disbursed;* the difference or *balance*, which, if any, must be in favor of the debit side, will be the amount of cash *on hand*. Again, the debit of *merchandise* account contains the items of the cost of goods purchased; and the credit side, the items of avails of goods sold, or what the separate sales have produced; the difference or *balance*, when all the facts are shown, being the preponderance of production over cost, or of cost over production, as the case may be—in other words the *net gain* or *net loss*. All transactions which mark the progress of the business, having in them the element of gain or loss, must occur between the two classes of accounts represented by *cash* and *merchandise*—the one taking cognizance of measuring financial worth, the other indicating its increase or diminution. (The mere exchange of one fixed value for another, such as the canceling of a personal indebtedness by receiving or paying cash, should be called a *liquidation* rather than a *transaction;* for although it requires a complete record, the same as the buying and selling of goods, it has nothing to do with the progress of the business, having in it no element of gain or loss.) The real transactions of the business being, therefore, divided between these two classes of accounts, we have in the one class—such as *merchandise*—the indication or statement of all the separate gains and losses which have occurred, and in the other—such as *cash*—the complete measure of the net resources, or real wealth; the two together establishing the satisfactory concurrence of cause and effect, or assertion and proof. Thus, the accounts of assertion or cause indicate a net gain or net loss, while those of proof or effect show correspondingly increased or diminished net worth.

The peculiar methods or forms of recording business affairs are so various—owing to the great variety of manipulation or processes, as also to the difference in the estimates of a competent record, that they cannot be pointed out. The general conception of the purpose and sphere of book-keeping, however, may be stated as compassing such a record of affairs as will enable the proprietor to know, at any time, the extent of his wealth and of what it consists. Of course, if the real worth of a business man can be ascertained at any time, the increase or diminution between any two periods may readily be obtained.

Book-keeping by the double-entry system has been in vogue since the latter part of the 15th century. It was originally practiced in Venice, and is even now known as the *Italian method*. The first treatise on the subject was written by Luca di Borgo, and published at Venice in 1495. A German treatise, written by Johann Gottlieb, was published at Nuremberg as early as 1531; and in England, in 1543, Hugh Oldcastle published a work on this subject under the fanciful title *A profitable Treatyce to learn to know the good order of the kepying of the famous reconynge, called in Latin, dare et habere, and in Englyshe, Debitour and Creditour.* **Mair's** *Book-keeping Modernized* was in very general use during most of the eighteenth century, but was superseded by **Benjamin Booth's** *Complete System of Book-keeping* (4to, London, 1789). The more modern publications upon this subject are very numerous; and the most recent of them embody many important modifications and improvements in the system, some of which are rendered necessary in order to apply it to the processes and methods of commercial transactions at present in vogue.

Book-keeping constitutes an important branch of instruction in all commercial schools and business colleges, in some of which it is pursued by both sexes. It is also taught sometimes in connection with arithmetic and penmanship, in the higher classes of the common schools, and quite uniformly in the evening schools in most of the cities of the Union. This branch of school instruction, however, is often opposed on the ground that it can only be acquired in connection with the actual practice of the counting-room. The objection is not well founded; for while it is obvious that no theoretical instruction, in this or any other art, can supersede the necessity of actual practice, yet that instruction performs an important function in laying the foundation, in the mind of the student, for such practical information and expertness as are subsequently to be attained. In many business colleges, for the purpose of obviating this objection, exercises are resorted to that nearly approximate to the operations of actual business. Thus the students of certain colleges carry on business correspondence with those of others situated in different parts of the United States; make and receive formal consignments of merchandise, buy and sell exchanges upon the different sections of the Union and Canada, and in this way learn the business peculiarities of different places. To insure a complete training, the functions of the students are constantly changed. The one, for instance, who holds the position of bill-clerk and collector to-day, is a book-keeper to-morrow, shipper the next day, etc. By this diversity the exercises are not only made more effective, but more interesting and impressive. (See BUSINESS COLLEGES.)

BOOK-MANUAL, a series of directions as to the method in which the reading-book should be held by pupils when they are receiving class instruction. Minute regulations for the distribution of books to the pupils of a class as well as for their proper manipulation while the lesson is given, have been devised, and in some schools are strictly enforced. There is no doubt that a regular and uniform method of this kind not only saves the book from injury occasioned by improper handling, but also contributes to the formation, in the minds of the pupils, of a love and habit of order and propriety, which they will apply to other things. Indeed, it is in connection with the apparently unimportant and trivial things that the teacher needs to exercise the greatest care, if he would educate his pupils in this direction; since such things being of frequent occurrence, habits are more readily formed by the constant repetition which they require than in any other way. The following minute directions were prepared, some years ago, for the schools of New York City, and were for many years in use. They are still employed by many teachers, those referring to book-monitors being usually omitted; since at the present time each pupil of the class is generally supplied with a book of his own. The distribution of books for a given exercise is still often necessary, and hence all the rules hold good:

I. The pupil should stand erect, his heels near together, toes turned out, and his face directed toward the teacher.

II. The book-monitor should stand at the head of the class, with the pile of books to be distributed across his *left* arm, with the backs from him, and with the top of the page to the right hand.

III. The book-monitor, with the *right* hand, hands a book to each pupil in succession, who should receive it in his *right* hand with the back of the book to the left, and then pass it into the left hand, in which he should hold it with the back upward, until a further order is given.

IV. When the page is given out, the book should be turned by the thumb on the side; and, while held with both hands, turned with the back downward, the thumbs meeting across the leaves at a point judged to be nearest the place to be found. On opening the book, the left hand slides down to the bottom, and thence to the middle, when the thumb and little finger are made to press on the two opposite pages. If the page is thus found, the pupil stands holding the book in his left hand, and lets his right hand fall by his side.

V. But if the pupil has opened short of the page required, the thumb of the right hand is to be placed near the upper corner of the page, while the forefinger lifts the leaves to bring in view the number of the page. If he finds he has not raised enough, the forefinger and thumb hold those already raised while the second finger lifts the leaves, and brings them within the grasp of the thumb and finger. When the required page is found, all the fingers are to be passed under the leaves, and the whole turned at once. Should the pupil, on the contrary, have opened too far, and be obliged to turn back, he places the right thumb, in like manner, on the left hand page, and the leaves are lifted as before described.

VI. Should the book be old, or so large as to make it wearisome to the pupil, the right hand may sustain the left in holding it.

VII. While reading, as the eye rises to the top of the right hand page, the right hand is raised; and with the forefinger under the leaf, the hand is slid down to the lower corner, and retained there during the reading of this page. This also is the position in which the book is to be held when about to be closed; in doing which, the left hand, being carried up to the side, supports the book firmly, while the right hand turns the part it supports over on the left thumb. The thumb will then be drawn out from between the leaves, and placed on the cover; and then the right hand will fall by the side.

VIII. When the reading is ended, the right hand retains the book, and the left hand falls by the side. The book will then be in a position to be handed to the book-monitor, who should receive it in his right hand, and place it on his left arm, with the back towards the body. The books will then be in the most suitable situation for being passed to the shelves, or drawers, where, without being crowded, they should be placed with uniformity and care.

See *Manual of Public School Society* (New York, 1840); *Report of the Board of Education of the City of New York* (1855).

BORGI, Giovanni, called the "founder of ragged schools," was born in Rome about 1735, and died about 1802. He was a poor artisan, who took a compassionate interest in vagrant children. He commenced his benevolent work by taking a number of these children to his home, providing them with food and clothing, and apprenticing them to trades. Enlisting the active interest of others, he was able to hire a suitable building, in which considerable numbers could be accommodated and taught; thus establishing what was afterwards called in Scotland and England a "ragged school." The institution founded by Borgi was continued after his death, and found an earnest patron in Pope Pius VII. (See RAGGED SCHOOLS.)

BOSTON, the capital and metropolis of Massachusetts, having a population, in 1875, of 341,919. The origin of the public-school system of Boston is found in the following order adopted by the freemen of the town, on the 13th of April, 1635: "Likewise it was then generally agreed upon, that our brother Philemon Purmont shall be entreated to become schoolmaster for the teaching and nurturing of children with us." The school thus set up has been perpetuated to the present day, and has long been known as the Public Latin School, whose chief function, during the whole period of its existence, has been the fitting of boys for Harvard College. This was the only public school in the town until 1682, when it was voted, in town meeting, "that a committee with the selectmen, consider and provide one or more free schools for the teaching of children to write and cipher within this town." Afterward, schools were established for teaching reading and spelling. These reading and writing schools have been gradually developed into the present grammar schools. Pupils were not admitted to these schools until they were seven years of age. Girls were not admitted to the grammar school until 1789; and, during the next forty years, they were permitted to attend only half the year, from April to October. In 1818, primary schools were established to fit pupils of both sexes for the grammar schools, to which children four years old and upward were admitted. In 1821, a school similar to the German real school, and named the English High School, "was instituted, with the design of furnishing the young men of this city, who are not intended for a collegiate course of study, and who have enjoyed the usual advantages of the other public schools, with the means of completing a good English education." A normal school for qualifying female teachers for the public schools of the city was established in 1852, in which a two years' course of training was provided. The plan of this school was soon modified by extending its course of study to three years, and by including in its curriculum all the branches usually taught in high schools. In 1872, this twofold institution, which bore the name of the Girls' High and Normal School, was separated into two distinct schools, a normal school for girls and a high school for girls. By the annexation of adjacent municipalities, during the past eight years, five mixed high schools have been added to the free public schools for secondary instruction. Elementary evening schools, and day schools for newsboys and bootblacks (licensed minors), were established in 1868; an evening high school, in 1869; a school for deaf-mutes, in 1869; evening industrial drawing schools, in 1870; a kindergarten, in 1870.—The public schools were originally, and for more then a century and a half, managed by the selectmen of the town, the clergy being invited by them to visit the schools, especially on public occasions. From 1789, until the adoption of the city charter, in 1822, they were controlled by a board composed of the selectmen and twelve committee men, annually elected in town meeting. Under the charter, the selectmen were replaced by the eight aldermen. From 1835 until 1855, the school board, called the Grammar School Board, consisted of twenty-four committee men, two being elected annually by the people in each ward, with the mayor and the president of the common council, *ex officio*. Up to this time, the primary schools had been under the management of a board, appointed annually by the Grammar School Board, consisting of one member for each school or teacher, the number being at first 36, but increased finally to 190. During the past twenty years, the school system of public schools has been in charge of one board, consisting originally of 74 members, 6 being elected in each ward by the people, to hold office for three years, the mayor and president of the common council being also members. By the annexation of municipalities above mentioned, the number of members was ultimately increased to 116. This board was discontinued at the beginning of 1876; and, in its place, a board was constituted consisting of the mayor, and 24 members elected by the people on a general ticket, to hold office for three years.—The office of superintendent of schools was established in 1851. The first incumbent was Nathan Bishop, who was succeeded by John D. Philbrick, who held the office for nearly 18 years, retiring in 1874. The old board did not fill the vacancy; and Mr. Philbrick was re-elected to the office by the new board in 1876. Under the new system of supervision, the school board is authorized to elect a board of six supervisors. The following persons were elected to this board: Lucretia Crocker, George M. Folsom, Samuel W. Mason, William Nichols, Ellis Peterson, and Benjamin F. Tweed. The superintendent is, *ex officio*, a member and the chairman. The principal duties assigned the board of supervisors are those of examining candidates for teachers, of examining the schools, in detail, twice in each year, and of conducting the annual examination of the pupils, in the different grades of schools, who are candidates for graduating diplomas.—Besides this board of supervisors, there is a general director of music, and another of drawing, each having several assistants.—For the purposes of supervision, the city is divided into nine territorial divisions, each division comprising from four to seven territorial districts, and each district containing one grammar school and several primary schools. The master of the grammar school is the principal of the district, having the supervision of all the schools situated therein. There are no primary principals. Each division is under the charge of a committee composed of three or five members of the school board. There is also a standing committee in charge of the high schools.

School System.—Besides a normal school for girls, with a course for study and training for one year, to which pupils are admitted only on passing a satisfactory examination in the usual high-school studies, there are 8 high schools; namely, 3 large central schools,—the Latin and the English high school for boys, and the girls' high school, and 5 others for both sexes, located in recently annexed districts. These schools (1876) contain 2,180 pupils, taught by 50 male teachers and 48 females, whose annual salaries amount to $180,251.33. There are 50 grammar schools, with 23,971 pupils, taught by 96 male teachers, and 511 females; the greater part of these schools are unmixed. In the primary grade, for children from 5 to 8 years of age, there are 18,665 pupils, taught by 414 teachers. The whole number of pupils belonging to the day and evening schools is 49,423. The aggregate annual salaries of the teachers of the grammar and primary schools amount to $993,932.95. The special schools are, 2 for licensed minors, 1 for deaf-mutes, 1 kindergarten, 14 elementary evening schools, 1 evening high school, and 6 evening schools for industrial drawing. These schools are taught by 177 teachers, whose annual salaries amount to $42,824.64. The whole number of regular and special teachers employed in the day and evening schools is 1,296; and the whole amount of their salaries is $1,217,008.92 ; incidental expenses, including salaries of officers, $507,364.69; total current expenses, $1,724,373.61. The amount expended during the year, besides this, for school-houses and sites, was $356,669.74. The cost per scholar for tuition, based on the average number belonging to the day schools, is $26.30; for incidentals, $10.55 ; total cost per scholar, $36.85. In 1875, the whole number of school-houses owned by the city was 144, which, with their sites, were valued at $8,500,000. The *revenue* for the support of the schools is derived exclusively from an annual tax on all the personal and real property in the city, which is levied by the city council. There is no legal restriction to the amount that may be levied for schools. The school sites are purchased, and the school buildings are erected, by the city council; but the plans of the buildings and the sites must be first approved by the school board, who have the authority also to determine the amount to be expended for the salaries of teachers. Tuition is gratuitous in all the schools; drawing-books, writing-books, and stationery are furnished gratuitously to all pupils; and, to indigent children text-books are also furnished at the public expense.

Salaries.—The salary of the superintendent is $4,500; of members of the board of supervisors, $4,000 each; of head-masters of high schools, $4,000; of masters of grammar schools and masters in high schools, $3,200; submasters in grammar and high schools, $2,600 ; of ushers in grammar and high schools, $2,000 ; of head-assistants (females) in grammar schools, $1,200; of assistants (female) in high schools $1,000 to $1,500; of assistants (female) in grammar schools, and teachers in primary schools, $800 ; of supervisors of music and drawing, $3,300 each ; and their assistants, $2,500. The city is divided into 14 truant districts, each having a truant officer, with a salary of $1,200. Habitual truants, pupils who have absented themselves from school several times without permission from their parents or teachers, and absentees, legally described as "children found in streets and public places, not attending schools and not engaged in a lawful occupation," are sentenced to a reformatory for one or two years. This plan of dealing with truants dates from 1850, and it has proved an efficient agency in promoting good attendance at school. Children growing up without education or salutary control, by reason of orphanage, or the neglect, crime, drunkenness, or other vice of parents, on complaint of the truant officers, may be sent to an institution assigned by the city for the purpose, where they are boarded and educated.

Private Schools and other Institutions.—In 1874, the whole number of pupils in private tuition-paying schools (excepting commercial "colleges"), whether incorporated or not, below the college grades, was 3,887. There were, besides, about 5,000 pupils in free denominational schools (Roman Catholic). The aggregate number of private schools is 93, with 358 instructors. There are 14 orphan asylums, with 37 instructors and 1,344 pupils; 5 business colleges, with 19 instructors and 717 pupils; 1 school of pharmacy, with 3 professors and 75 students; 2 schools of dentistry, with 15 professors and 40 students; 1 college (The Boston College, R. C.), with 8 professors and 145 students; 1 university (The Boston University, Methodist), with a school of liberal arts, and several professional schools; 1 school of theology, with 7 professors and 94 students; 1 school of law, with 14 professors and 68 students; 2 schools of medicine, with 35 professors and 195 students; 1 polytechnic school (Massachusetts Institute of Technology), with 36 professors and 356 students; 1 normal art school (state), with 8 professors and 200 students; 1 museum of fine arts, value of collections $100,000, value of buildings, etc., $400,000; 1 museum of natural history, having 10,000 volumes; value of collections, $100,000, of buildings, $138,000; 14 public libraries, 456,427 volumes, 232,900 pamphlets; value of buildings, $1,026,700; Sunday-schools, 157, with 4,450 teachers, 43,540 scholars, and 83,700 volumes in libraries. There are two conservatories of music, and numerous smaller music schools. One of the most important educational institutions in Boston is the Lowell Institute, established in 1839 by the munificence of John Lowell, to provide for "regular courses of *free* public lectures upon the most important branches of natural and moral science, to be annually delivered in the city of Boston." The fund, in January, 1873, was $642,711.32; the expenses for 1872 were $31,912.47, the number of free lectures delivered during the year being 264. Two drawing-schools, and the school of industrial design in connection with the Massachusetts Institute of Technology, are maintained by the fund. The Institute is managed by one trustee, a kinsman of the founder. No printed document or report has ever been issued by the Institute. The Boston City Free Public Library, which was opened in 1853, and is supported by taxation in the same manner as the public schools, has six branches, and contains 306,287 volumes; the annual expense of maintaining it is about $130,000.

BOSTON COLLEGE, at Boston, Mass., was founded in 1863 by the Fathers of the Society of Jesus, by whom it is conducted. Its object is to impart a religious, classical, and scientific education. The course begins with a "class of rudiments," and extending, in successive years, through three "classes of grammar," a "class of poetry," and a "class of rhetoric," into a seventh year of philosophy and chemistry. As in most of the colleges of this fraternity, classical studies occupy a prominent place in all the classes of the entire course. In 1874, there was a corps of 16 professors and other instructors, with 15 collegiate, and 143 preparatory students. The value of its grounds, buildings, etc., is $200,000, and it has a library of about 4,000 volumes. Rev. Robert Fulton, S. J., is (1876) the president of the institution. The annual tuition fee is $60.

BOSTON UNIVERSITY, at Boston, Mass., was founded by the munificence of Isaac Rich, who bequeathed for that purpose the greater part of his estate, amounting to nearly $2,000,000. The first, however, to suggest and advocate its establishment, was the late Lee Claflin, father of a recent governor of Massachusetts, whose views found an earnest supporter in Jacob Sleeper. Hence, these three persons are regarded as the founders of the institution, although Mr. Rich was its most munificent patron. Its charter was obtained from the legislature of Massachusetts in 1869. Its plan of organization is unique and comprehensive, including (1) *Preparatory Departments*; (2) *Colleges*; (3) *Professional Schools*; and (4) *School of all Sciences* (*Schola Scholarum*). The first of these are designed to fit students for the colleges; the second, to prepare them for the higher industries and arts of civilization, and for the study of the learned professions; the third, to qualify them theoretically and practically for professional life; while the fourth, including and supplementing the work of the professional schools, is designed to be a universal, or non-professional school of elective post-graduate studies, with special degrees, scholarships, and fellowships.

Of the colleges three have already been organized: (1) that of *Liberal Arts*, in 1873; (2) that of *Music*, in 1872; (3) that of *Agriculture*, supplied by the Massachusetts Agricultural College, at Amherst, associated with the university in 1875. This college has enjoyed a very high reputation since its organization in 1867; and by the arrangement made with the Boston University, matriculants in the latter, who desire instruction in agriculture, horticulture, and related branches, can receive it in the College, and on completing the prescribed course, can receive their degree from the University as well as from the College. The *College of Liberal Arts* answers to what is called in some American universities the *Academic Department*. Its courses of instruction qualify students for the degrees of bachelor of arts, bachelor of philosophy, and bachelor of science. The *College of Music* is designed for students of the average proficiency of graduates of the best American conservatories of music; and is the only institution of its grade and kind in the United States. The regular courses of instruction extend through four years, and include (1) a course for vocalists; (2) a course for pianists; (3) a course for organists; (4) courses for orchestral performers. All these courses include the study of musical theory, also the history and esthetics of music.

The *professional schools* include that of theology, adopted in 1871; of law, opened in 1872; of medicine, in 1873; of oratory, in 1873. The School of all Sciences was established in 1874. The school of theology was formerly the Methodist Episcopal Theological Seminary of Boston, which was organized in 1847. A school of fine arts is projected.

A fundamental idea with those who organized the university was, that a university should exist not for one sex merely, but equally for the two; hence the most ultra principles of *co-education* are carried out. Young men and young women are welcomed to all the advantages of the institution on precisely the same conditions,—not merely to the bench of the pupil, but also to the chair of the professor. The trustees of the New England Female Medical College, said to be the oldest medical college for women in the world, by a special act of the legislature, in 1875, transferred all its properties and franchises to the Boston University, and was thus merged into its broader co-educative school of medicine.

Post-graduate students of this university, desiring to fit themselves for professorships of Greek, Latin, modern languages, philosophy, history, or art, enjoy special advantages. By virtue of an arrangement, effected in 1875, with the authorities of the National University at Athens, and those of the Royal University at Rome, any member of the School of all Sciences, duly recommended, may pursue, without expense for instruction, and for any number of years, select or regular courses of study in any department of said universities, enjoying all the rights and privileges of university citizenship; and upon returning, and passing a satisfactory examination in the work accomplished, can receive a degree from the Boston University. The faculties of these two foreign universities are thus co-operating faculties of the School of all Sciences, which is designed (1) for the benefit of bachelors of arts, philosophy, or science, of whatsoever college, who, with little or no direct reference to fitting themselves for a professional life, may desire to receive post-graduate instruction in this university; (2) to meet the wants of all graduates in theology, law, medicine, or other professional course, who may wish to supplement their professional culture by courses of study in related sciences, arts, and professions. This school is, thus, like the *studium generale* of the middle ages, the crowning and unifying department of the entire university organization.

Thus far, this comprehensive plan has been successfully carried out; and the institution has received a large patronage and has accomplished much work. In 1874—5, there were 745 students belonging to the institution; of whom 268 were in the preparatory departments; 81, in the colleges; and 396 in the schools. Of the entire number in the colleges and schools, 102 were females. Its graduates from the schools of theology, law, and medicine were more numerous than those from the corresponding schools of Harvard or Yale. Its financial condition is prosperous, notwithstanding the heavy loss which it suffered in the great Boston conflagration of 1872. The final transfer of the Rich fund does not take place till 1882. The president of the university is William F. Warren, S. T. D., LL. D., elected in 1873.—See *Boston University Year Books*, edited by the university council, vols. I, II, and III.

BOTANY (Gr. βοτάνη, herb, plant), the science of vegetable life, treating of the elementary composition, structure, habits, functions, and classification of plants, in which are included herbs, shrubs, and trees. This is a branch of that general descriptive, or empirical science, called *natural history;* being based upon the facts of observation. The educative value of botany, especially in the early stages of the mind's development, is very considerable,—far more so, indeed, than its usual place in the curriculum of school education would indicate; since it is generally superseded by subjects which seem to be of more practical importance to the pupil in his after life. In the more modern systems of elementary education, both in this country and in Europe, particularly in Germany, the training of the perceptive faculties by the systematic observation of objects holds a very prominent place, indeed is considered the basis of all sound mental culture; and among all the objects of nature, none can claim precedence in point of variety, beauty, and interest, for this purpose, over those of which botany treats. It has been well said by a writer upon this subject, "As the love and observation of flowers are among the earliest phenomena of the mental life, so should some correct knowledge of them be among the earliest teachings." The facility with which plants may be collected, handled, and analyzed, as well as their general attractiveness, makes them peculiarly well adapted for object teaching. Bugs and beetles are often quite repulsive to a child, but where is the girl or boy who is not pleased with the contemplation, or the manipulation, of leaves and flowers?

For the purpose of this kind of instruction, and as an introduction of the subject to young minds, the chief point is to direct the attention of the child to the most obvious characteristics of plants and of their parts, as leaves, stems, roots, flowers, seeds, etc. They should be set at once to collect specimens for themselves, and be shown how (1) to observe them, (2) how to state and record the results of their observations, so that they may acquire a knowledge of the words used to express the characteristic peculiarities of different objects. Here will be afforded a wide range for the exercise of *comparative observation*, in the perception of both resemblances and differences, but particularly the latter. It is not requisite, nay it would be injurious, to teach anything of classification at this stage; nor indeed is it necessary that the child should know the name of any plant the whole or part of which is under observation. Some prefer to teach the names; since the child's mind has a craving for the names of such objects as interest it. When therefore, the name is asked for by the pupil, there can be no objection to the teacher's telling it. The observation and description of the characteristics are, however, the essential points to be insisted upon. For this purpose, no plan can be better than the "Schedule Method," invented by Prof. J. S. Henslow, of Cambridge, England, and ingeniously, as well as exhaustively, applied by Miss Youmans in her elementary textbooks on this subject. According to this method, the pupil starts with an observation of the simplest characteristics, as the parts of the leaf—its blade, petioles, stipules; its venation, margin, etc. The general appearance of these may be at first represented by pictures, but only to enable the learner to study the natural objects, which he carefully observes, and writes the characters in his schedule, attaching each specimen to it, as a verification to the teacher of the accuracy of his observation. (See YOUMANS'S *First Book of Botany.*) It will be easily seen that by a continuous application of this plan, the pupil will acquire a considerable knowledge of the characteristics of plants, as well as of the nomenclature of the science; and, moreover, that at every step his observation, and his judgment too, will be thoroughly exercised and trained, in order to be able to describe the minute distinctions of form, structure, color, etc., that are subjected to his discriminative attention. This process harmonizes entirely with the following just view of a distinguished educator: "The first instruction of children in the empirical sciences should mainly consist in exhibiting to them interesting objects and phenomena; in allowing them to look, handle, and ask questions; and in giving opportunity for the free exercise of their youthful imaginations. A teacher may guide them in their explorations of the neighborhood, direct their observations, make inquiries, give explanations, conduct experiments, call things by their right names; but he must be careful to do it in such a manner as not to check their play of fancy or chill their flow of feeling." (See WICKERSHAM'S *Methods of Instruction.*) But the young pupil is not to be kept constantly at mere observation, or the comparison of the form, structure, color, etc., of leaves, flowers, and other parts of plants; his attention may be called to the simple facts of vegetable physiology, and thus shown "how plants grow" and "how they behave," as well as what they are. The elementary works of Prof. Gray, bearing the titles above quoted (*How Plants Grow*, and *How Plants Behave*), and Dr. HOOKER'S *Child's Book of Nature*, will be useful auxiliaries to the teacher for this purpose. Such information as the circulation of the sap, its use, the functions of the leaf, the root, the flower, and the seed, communicated in an appropriate style and explained by their analogy with other things, familiar to the mind of every child, will properly supplement the knowledge gained by the pupil through his own observations. The following description from the *Child's Book of Nature*, will illustrate what is meant by this:

> "The bark is not all one thing. It is made up of two parts; or rather, we should say, there are two barks. There is an outer bark and an inner one. The outer bark has no life in it.
>
> It is this outer bark that gives such a roughness to the trunks of some trees, as the elm and the oak. This outer bark is a coat for the tree. It covers up the living parts so that they shall not be injured. It does for the tree what our clothes do for our bodies. It is not a perfectly tight coat. It has little openings everywhere in it. It would be bad for the tree to have this coat on it tight, just as it would be bad for our bodies to have an India-rubber covering close to the skin."

In such a simple style as this, and with the use of similar illustrations, much interest may be awakened in the child's mind, its observing and reasoning faculties quickened, and a love of natural objects infused, which independently of the practical use of the knowledge gained, will constitute a mental culture of the highest value and prove a life-long blessing to its possessor. If, after this elementary instruction, it is deemed important that the science should be studied as such, the pupil must be gradually trained in classification, for which the foundation will have been laid. In this branch of study, as in all other departments of natural history, the mental processes to be successively performed are: (1) Observation, with the view to comparison and analysis; (2) Classification; (3) Induction, or the discovery of principles, so as to embody the observed facts into a science; and (4) Application of the scientific principles to new facts. The elementary exercises already described conduct the pupil through the first stage only; but the scientific study does not begin until the third, and is not completed till he has become practiced in the fourth. The observation of common characters in plants will necessarily lead the mind of the pupil to perceive the method and the value of classification; but such exercises need not be very protracted, since it is natural even to a child to generalize and classify. He will soon be prepared for the methodical study of systematic botany; and then very properly may be supplied with a good text-book. But the pupils must only use it as an auxiliary or instrument, in the study of nature. Let them still be encouraged to collect specimens, to notice as fully and accurately as possible their peculiarities, and to describe them by the proper terms. Some simple means of drying and preserving plants will be very serviceable, so that the school at least may possess a tolerably complete herbarium. Magnified and colored representations, such as those supplied by Prang's *Natural History Series*, and especially Henslow's *Botanical Charts*, will prove a great aid in showing clearly what the pupils fail to make out in the actual specimens. For the purpose of analyzing flowers, etc., a small microscope will be needed; one that can be so used as to leave both hands free for the work of dissection, is greatly to be preferred. This, with a sharp knife, forceps, and large needles, fixed in handles, is all that will be needed. Judgment should be exercised in the selection of the flowers for analysis. The simpler and more obvious, as the *Cruciferæ*, *Rosaceæ*, *Leguminosæ*, *Ranunculaceæ*, *Violaceæ*, and *Labiatæ*, before such orders as the *Compositæ*, *Umbelliferæ*, *Juncaceæ*, and *Cyperaceæ*. The grasses, ferns, mosses, fungi, etc., will need to be studied at an advanced stage of the course. The artificial keys supplied in most text-books should be used with judgment. Students are very apt to become absorbed in the desire to discover the names of plants by the use of these devices, as if that were the end of the study. But while there is no doubt that much progress can be made by the verification of the order and species of a plant, in this way, the great object to be attained is, that the student should become so well versed in observing and describing the peculiarities of plants, and in their classification, that he may be able to place them at once where they belong, only using the key when he has come across a specimen which belongs to some order with which he is unacquainted.

The utility of botany as a branch of school study has been thoughtlessly called in question. Its value as an educational agent has already been sufficiently shown, and a brief consideration of the relations of vegetable life to the most important interests of society will suffice to demonstrate its exceeding importance as a branch of knowledge. The agriculturist is greatly at fault who knows nothing of the principles of vegetable physiology, who cannot distinguish the properties and characteristics of the plants that cover his domain — some the object of his most tender care and concern, others his greatest bane. The florist and horticulturist are certainly unacquainted with their own arts, unless they are proficient in a knowledge of the structure, functions, and habits of plants; and the apothecary and physician have also an especial need of similar information. The geographer and the geologist; and indeed the scientist, in every department, needs to have a good acquaintance with the vegetable kingdom. Says Prof. Henfrey: "In geography, that is, physical geography, the concrete natural history of plants becomes a portion of the concrete natural history of the globe; the physiological laws are involved with physical laws of climate, soil, etc., in the explanation of possible distributions, either in an abstract point of view, or for the purpose of practical application; while the systematic classifications, and the natural history of particular species, become the only guide by which we can attempt to trace back the existing conditions of distribution towards their origin, and thus perform the share due to botany; in the historical connection of physical geography with geology, of which it is properly only the statical part." Moreover, to the clergyman, the lawyer, the orator, and all who need to cultivate and employ the art of persuasion, involving as it does, too, the art of elucidation, few subjects present so wide a field for familiar and impressive illustrations as the domain of plants, rich not only in those natural flowers which are pleasing to the eye, but also in those flowers of speech, which constitute the most attractive ornaments of rhetoric and poetry. The traveler and explorer in distant lands, who is a botanist, can find in the flora of every region he visits, food for profitable instruction and research; and the rural wayfarer, who has fled the bustle and confusion of city life for relief and rest, will, in a knowledge of this science, never fail to realize, at every step he takes, the most refreshing enjoyment. Surely no stronger plea can be set up for any of the branches of study which occupy so conspicuous a place in the educational schemes of schools and colleges, those alone excepted which constitute the indispensable foundation of all mental improvement. — See YOUMANS, *Educational Claims of Botany* (N.Y., 1870), *First Book of Botany* (N. Y., 1870), and *Second Book of Botany* (N. Y., 1873); GRAY, *How Plants Grow* (N. Y., 1858); F. A. P. BARNARD, *Early Mental Training, and* HENFREY'S lecture on the *Educational Claims of Botanical Science*, in *The Culture demanded by Modern Life*, edited by E. L. YOUMANS (N. Y., 1867); WICKERSHAM, *Methods of Instruction* (Phil., 1865); *How to Teach, a Manual of Methods* (N. Y., 1873).

BOWDOIN COLLEGE, at Brunswick, Maine, the oldest and most prominent literary institution in the state, was chartered in 1794, and organized in 1802. It was named in honor of Gov. James Bowdoin of Massachusetts. The government was vested in a board of trustees and a board of overseers, which, in 1801, elected Joseph McKeen, D. D., the first president of the College. He was succeeded, in 1807, by Jesse Appleton, D. D., who served till 1819, when Rev. William Allen was elected his successor, and continued in office till 1839, when he was succeeded by Leonard Woods, D. D., who held office till 1866. In 1867, the Rev. Samuel Harris, S.T.D., was elected president, and was succeeded, in 1871, by Joshua L. Chamberlain, LL. D., the present incumbent. The prevailing religious denomination is the Congregationalist. Provision is made in this institution for a scientific course of study, distinct from the regular collegiate course, during the last two years, and especially embracing the modern languages, natural science, engineering, mechanics, and drawing. There is also a post-graduate course, which affords instruction in (1) *Letters*, comprising languages, ancient and modern (including the oriental), with the literature of each; philology, rhetoric, logic, history, elocution, and the fine arts; (2) *Science*, comprising higher mathematics, physics, natural history, and chemistry, in their uses and applications; (3) *Philosophy*, comprising psychology, metaphysics, ethics, esthetics, and politics, the latter including the theory of government, constitutional history, principles of law, and international law. The first leads to the degree of master of arts (A. M.); the second, to that of doctor of science (Sc. D.); and the third, to that of doctor of philosophy (Ph. D.). Graduates who have completed any course in the post-graduate studies with honor, may be appointed *fellows*, to reside at the college with all the privileges of the same one or two years further, without charge, enjoying facilities for studies still more advanced, with opportunities for teaching in the line of their specialties. Much attention is given to physical culture, a gymnasium being provided with the most approved apparatus. The exercises are carefully directed upon physiological and hygienic principles, with the view to develop the bodily powers, but are, at the same time, subservient to the discipline of the mind. Instruction is also afforded in military science, and daily exercises in drill are given by an officer of the army detailed for that purpose. Since 1873, these drill exercises have been optional, the students electing between them and the gymnasium. Medical training is given through the Medical School of Maine, which, by an act of the legislature, in 1821, was placed under the superintendence and direction of the trustees and overseers of Bowdoin College. The number of professors and other instructors in the college, in 1874, was 15, and of students, 173, exclusive of those in the medical school. The value of the grounds, buildings, and apparatus is about $85,000, and its productive funds amount to $154,000. The college and society libraries contain about 31,000 volumes. The roll of *alumni* includes some illustrious names. Here, in 1825, graduated Henry W. Longfellow and Nathaniel Hawthorne; and subsequently Franklin Pierce, Geo. B. Cheever, John P. Hale, S. S. Prentiss, and Calvin E. Stowe. Thomas C. Upham, D. D., was professor of mental philosophy from 1824 to 1867; and H. W. Longfellow held the position of professor of modern languages from 1829 to 1835, when he was called to a similar position in Harvard College. The annual tuition fee is about $75. There are ten endowed scholarships, yielding from $50 to $60 per annum and, besides these, funds donated to the institution, amounting to about $10,000, from which aid is liberally afforded to indigent students.

BOYS, Education of. In the education of boys, the same general principles are to be applied as in that of girls; and, up to a certain age, in their school education, the same arrangements for discipline and instruction will answer. Education, however, rightly considered, has for its object to aid and guide the development of the powers or faculties, both generic and specific, of the individuals who are subjected to its ministrations; and, consequently, its processes should vary with the character of the faculties which are to be developed. And this is by no means the whole. Education is to be addressed to all the elements of character,—physical, mental, and moral. There are propensities to restrain and subdue as well as powers to bring out and direct. There are tendencies to good to cultivate and encourage; and there are, from the first, those of an opposite character to repress or extinguish. There is not only the intelligence to be stimulated and guided, there is the will to be subdued,—to be made subject, not only to the authority of the educator, but to the conscience of the educated. Doubtless, there are principles sufficiently comprehensive to embrace all these considerations, and to afford a safe foundation for practical methods and rules sufficiently minute to reach every case, however peculiar or eccentric; but what we wish here especially to lay down, is the important, fundamental law, that education, claiming to be scientific, and not a mere mechanical empiricism, must take cognizance of all these elements of human character, not only in their average condition and degree, but in those marked diversities which constitute individual character. (See EDUCATION.) According to this principle, boys and girls can never properly be subjected to precisely the same processes of education, because their natures are very different,—physically, mentally, and morally. This fact is, however, not necessarily in conflict with *co-education;* indeed, it may be an argument in favor of it. Children of both sexes may be trained in the same family, and instructed in the same school or class; but the wise parent and the skillful teacher will often have to make a careful discrimination in his treatment of them as boys or girls.

The ancients had very different educational systems for the two sexes, for two reasons: (1) because of their diverse natures, and (2) because of their different spheres of life. Nearly all that we read of ancient education concerns boys; but we are not to suppose, for this reason, that the education of the girls was overlooked. That of the boys was public, and was a matter of public concern, for the welfare and the safety of the state depended upon it; but that of the girls exclusively belonged to the social circle, and was, therefore, strictly private.

In the *Cyropædia* of Xenophon, we have a beautiful picture of the education of boys among the Persians, fictitious in some particulars, without doubt, but illustrative of ancient manners and views as to the objects of such an education. The public good was the exclusive end of this system; and as the education of the future citizens for their duties in peace and war was the most important concern of the state, this duty was not left to the parents, by whom it might be neglected or improperly performed, but was the subject of special governmental regulations. Boys were all brought up in common, according to a uniform system, which prescribed the kind of food, the times of eating, the nature and duration of physical exercises, and the modes of punishment. By a very plain and simple diet, the boys were accustomed to strict temperance; and such modes of bodily exercise were employed as would inure them to the hardships and fatigues of war. In their schools, the chief object was to teach the pupils justice and virtue, with the view that it is much easier to prevent the commission of crimes by proper early education, than by severity of punishment at a more advanced period of life.

The Spartan system of educating boys resembled that of the Persians as described by Xenophon, except that it was deficient in some of the finer moral elements; and in its physical characteristics was, perhaps, more severe. (See SPARTA.) For an account of the education of boys among the Athenians, see ATHENS. Among the Romans, the education of boys was under the guidance of the father; though much of it, particularly in its earliest stages, was under the superintendence of the mother. She attended not only to their physical wants, but took pains to form their language, their ideas, their moral sentiments, and their religious feelings. Of this we have an example in Cornelia, the mother of the Gracchi. Later, the boy was furnished with a *custos*, or *paedagogus*, who sometimes instructed him in gymnastics, or accompanied him to the exercises, or to the theatre, being responsible for his safety. This office, in a Roman family, was performed by one of the older slaves, and its functions continued until the age of manhood was reached. Some distinguished Romans, the elder Cato for example, taught their own sons; but usually teachers were especially employed to give instruction in reading, writing, calculation, rhetoric, etc. A teacher of this kind was called *ludi magister*. Youths were, for the space of a year, exercised in arms in the Campus Martius, and in swimming in the Tiber. (See ROME.) The most celebrated writer on the education of boys among the Romans is Quintilian, whose great work *Institutiones Oratoriæ*, although designed to explain the education necessary for the complete orator, yet treats likewise of the early training and instruction of the boy. Thus he says: "Many are opposed to the public schools, for the reason that the children acquire bad habits there, and also because the teacher can bestow more attention upon one than upon many; but these objections against the good old regulations are not valid, since there are also many evils connected with private instruction; and, moreover, if boys were not early rendered effeminate, they would not be so easily corrupted in the public schools. The instruction in these schools is to be preferred, especially for the future orator, in order that he may accustom himself to the multitude, and be stimulated by competition." Quintilian enjoined particularly upon the teacher to make himself acquainted with the disposition and capacity (*natura et ingenium*) of his pupils, and to treat every one according to his peculiar traits. Other Roman writers treated of the education of youth. Varro wrote *Capys, aut de liberis educandis*, which, together with most of this author's numerous treatises, has perished.

In modern times, most of the special treatises on education refer particularly to the training and instruction of boys. This is true of Montaigne, Milton, and Locke. The special education of girls has engaged the attention of but few writers. Very many, therefore, of the principles and rules laid down are based upon the peculiar disposition and character of boys. Milton's definition of education is limited to the one sex, its scope being "to fit a man to perform justly, skillfully, and magnanimously all the offices, both private and public, of peace and war"; and his various directions as to studies, physical exercises, etc., all have an exclusive application to boys, who he says, among other things, "must be also practiced in all the locks and gripes of wrestling, wherein Englishmen were wont to excel, as need may often be in fight to tug, to grapple, and to close." Fencing he particularly approves: "The exercise which I commend first, is the exact use of their weapon, to guard, and to strike safely with edge or point; this will keep them healthy, nimble, strong, and well in breath, is also the likeliest means to make them grow large and tall, and to inspire them with a gallant and fearless courage, which being tempered with seasonable lectures and precepts to them of true fortitude and patience, will turn into a native and heroic valor, and make them hate the cowardice of doing wrong."

Most writers on education have recognized the necessity of discriminating between the sexes in education. "From the beginning of the eighth year," says Schwarz, "the two sexes require, in almost every respect, a different education. The principal concern of boys are the studies of school, alternating with bodily exercise. Their amusements are, at an early age, of the more active kind: chasing the butterfly, and scouring the plain with other boys; at a later age, they should engage in pedestrian excursions and bold undertakings, and enjoy the cheerful company of their equals; taking care, however, that their playmates be of the proper character, and that their hearts be cultivated for what is noble and generous. This vigilant supervision should follow them to the latter years of youth, and guard them against all bad company. Their propensity to imitate their older associates, which, among other evil practices, so often leads to the early habit of smoking, and the like, should be enlisted on the side of what is good and praiseworthy, by constantly managing their entire education in accordance with sound principles." The same writer also observes very justly: "Although boys should be chiefly educated by men, and girls by women, the two sexes should unite in the education of both boys and girls. The boy requires the mild and gentle treatment of the mother, in order that his sensibility may not become callous; and, besides, he will always need some intercourse with persons of the other sex, both young and adult, as it is found in families, because otherwise he will contract habits of rudeness, without developing a susceptibility for the finer feelings of humanity."

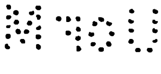
The requirements of modern civilization, as well as the usages of modern social life, appear to dictate a separate education for boys, after the elementary stages, both on account of the diversity in the mental and physical constitution of boys and girls, and because of the difference in the spheres of life which they are to occupy. Here, however, there is great difference of opinion, many, and particularly females themselves contending for the breaking down of all distinctions of the kind, and throwing open all grades and classes of educational institutions, both general and technical, to both sexes. (See Co-Education.) This question will not be discussed here; but the fact simply stated that many of the public schools in the United States have an organization especially adapted to males, and that, among private seminaries, this rule chiefly prevails. Boarding-schools, with arrangements for gymnastic and other physical exercises, and a school military drill, are quite common; while business and commercial colleges and schools have become very numerous. (See Business Colleges.) These institutions aim to give a training which will fit their pupils to fill their future positions as accountants, merchants, or business men in any capacity; and, in connection therewith, impart such principles of honor and integrity, as will give them true manliness and Christian integrity. Some of these institutions are open to girls as well; but just as there are seminaries and colleges which are for females exclusively, so there are likewise institutions especially devoted to the education of boys. — See Milton, *Of Education;* Schwarz, *Erziehungslehre* (Leipsic, 1829); Rousseau, *Émile, ou de l'Éducation*; H. I. Schmidt, *History of Education* (N. Y., 1842); Hailman, *History of Pedagogy* (Cincinnati, 1874.)

BRAIDWOOD, Thomas, a noted teacher of deaf-mutes, was born in Scotland in 1715, and died at Hackney, near London, in 1806. He kept an establishment at Dumbiedikes, near Edinburgh, which was the first regular school for deaf-mutes in Great Britain. It is this institution that Dr. Johnson praised so highly, and in which, as recorded by Boswell, he gave one of his *sesquipedalia verba*, to test the skill of the pupils in articulation. (See Boswell's *Life of Johnson.*) Subsequently, Braidwood kept a school at Hackney, near London, in which he continued till his death, and which was afterward maintained by his widow and grand-children till 1816. He kept his methods of instruction secret as far as possible; but the chief feature of his system was articulation and reading from the lip. The manual alphabet was likewise employed. An account of his Edinburgh school was published by Francis Green of Boston, the father of one of Braidwood's pupils, in a work entitled *Vox oculis subjecta* (London, 1783).

BRAILLE, Louis, the inventor of a tangible point system for the instruction of the blind, was born near Paris in 1809, and died in 1852. He lost his sight at a very early age, and was instructed in the institute for the blind at Paris. He was highly distinguished for his intelligence, and the rapidity with which he accomplished himself in various branches of knowledge, particularly music; and besides being a skillful player upon several other instruments, was reckoned among the best organists of his time. At the age of eighteen, he became a professor in the Royal Institute; and while in that position (about 1839), devised his method of writing, based on the point system of M. Charles Barbier, which he also applied to musical notation. *Le système Braille* was introduced in most of the continental schools. A new system of tangible point writing and printing has, quite recently, been devised by William B. Wait, superintendent of the New York institution for the blind, in which the letters which occur oftenest, such as *e*, *a*, and *i*, are represented by the smallest number of points. — See WAIT'S *New York System of Tangible Musical Notation and Point Writing and Printing* (New York, 1873).

BRAIN, the principal organ of the nervous system, and the fountain of nervous energy to the whole body. It is the seat of consciousness, feeling, and intellect, and also the recipient of all impressions made on any part of the nervous system. The brain being the organ especially concerned in education, its hygiene is an important subject for the attention of the teacher. The development of this organ is very rapid. The average weight of the brain in adults is about 48 ounces, and this limit is generally attained at the age of thirteen years. No organ is, from the time of birth, so regularly and so incessantly exercised as the brain. During the period of infancy, nature herself superintends this process; and unless her care is interfered with through the ignorance, folly, or neglect of the mother or nurse, it results in a healthy growth and development. When the age of infancy is passed, and the child is surrendered to the educator, intelligence and skill may accomplish much benefit in regulating the cerebral development; or a want of skill and intelligence may do, and often does, very great injury. Exercise is the natural instrument by which all the bodily organs are brought to a maturity of growth and strength, and by which they are kept in a condition of health. In applying this principle, the teacher should see that the exercise be proper, (1) as to its kind, (2) as to its degree, (3) as to its direction; and in all these respects, that it is adapted to the age and peculiar physical condition of the child to be educated. The same process will not answer for all. The teacher who wishes to do good, whose aim is really to educate, will study the external indications of temperament, of bodily health and disease, and also of cerebral structure; and will, as far as possible, regulate his operations accordingly. The brain is exercised both by thought and feeling; being the seat of various faculties, both mental and moral, its activities are aroused by whatever is addressed to the intellect, the conscience, the emotions, or the propensities. "The first step," says Combe, "towards establishing the regular exercise of the brain, is to educate and train the mental faculties in youth; and the second is to place the individual habitually in circumstances demanding the discharge of useful and important duties." The healthy development of the brain may be prevented (1) by wrong exercise, (2) by being overtasked, (3) by bad physical conditions, (4) by bad moral conditions. Overstrained or too long continued attention, excessive tasks from books, committed to memory under the pressure of fear, long confinement in close rooms, and hence the want of properly oxygenated air, will impair the functions of the brain, and lay the foundation, not only of future disease, but perhaps of future imbecility. So, too, when subjected to harsh discipline, to unkind treatment, to a moral atmosphere vitiated by the irritability, ill-humor, and moroseness of the parent or teacher, the brain of the child loses even its natural or normal physical condition; and its growth is necessarily morbid. (See PHYSICAL EDUCATION.)

BRAZIL, an empire of South America, having an area of 3,288,100 sq. m., and a population, according to the census of 1872, of 9,700,187. It is one of the most important states of the world, being exceeded, in extent, only by the Russian, British, and Chinese empires, and by the United States; while, in regard to population, it ranks as the 13th state. The established religion of the empire is the Roman Catholic; but according to Art. 5. of the constitution, all other religions are tolerated, "with their domestic or private forms of worship, in buildings erected for this purpose, but without the exterior form of temples." No person can be persecuted for religious acts or motives. The number of Protestants is estimated at about 30,000. The majority of them are Germans, who have about 20 churches and are united in a synod. Besides the German Protestants, there are English and French Protestant churches; and the Presbyterians of the United States have established a small number of congregations among the native Brazilian population. The national language is the Portuguese. The number of German and Swiss colonies was, in 1869, about 50, with about 40,000 German-speaking settlers. The whites number probably one third of the population, the remaining two-thirds being made up of mixed races, civilized and savage Indians, and Africans, which last form the most numerous unmixed race in the empire. The number of savage Indians is estimated at from 250,000 to 500,000. They are divided into a large number of different tribes and speak many different dialects, though all understand the *lingoa geral*, which was formed by the priests, traders, and slave-hunters, on the basis of the *Tupi-Guarani* (language of the native tribes *Tupi* and *Guarani*.) The Indians being found unprofitable as slaves, recourse was had to the importation of negroes from Africa. These were treated, until 1850 with almost unparalleled cruelty, though eman-



cipation was always encouraged, and no man was debarred by his color from reaching any position in church or state. A law, passed Sept. 28., 1871, provided for the gradual abolition of slavery.

Brazil was discovered and taken possession of for the king of Portugal, in 1500, and from that time remained under the control of Portugal, with a short interruption, until 1822, when it was declared an independent empire, and Dom Pedro I. was proclaimed its first emperor. According to the constitution of 1824, public elementary instruction is gratuitous, and placed under the control of the state. Private schools, like all others, are subject to the superintendence of the state government. Public instruction is graded, as in other countries, into primary, secondary, and superior or scientific instruction. Public instruction, like ecclesiastical affairs, belongs to the department of the minister of the interior. Secondary and primary instruction, are, however, chiefly regulated by the provincial assemblies, and placed under the administration of the presidents of the provinces. As the Brazilian provinces enjoy a high degree of self-government, there is but little uniformity in the organization, but generally the provinces have modeled their schools after those of the capital. As long as Brazil was a Portuguese colony, little was done for public instruction; but Dom Pedro I., as soon as he had ascended the throne, showed great interest in the promotion of public education, and established a number of new schools. Still more was done by his son and successor, Pedro II. (since 1831); but the provisions of the constitution of 1824 were never fully carried out until 1851, when the two chambers passed a law authorizing the government to reorganize the systems of higher instruction throughout the empire, and those of secondary and primary instruction in the capital. In accordance with this law, the minister of the interior, Pedreiro de Couto Ferraz, promulgated, Feb. 14., 1854, the organic provisions which had been drafted by De Almeida Roza, and which have remained the basis of everything that has since been accomplished in Brazil for the promotion of public instruction.

Brazil has, like Portugal, public schools of the first and second (higher) grade. The course of instruction in the former embraces religion, ethics, reading and writing, the elements of the Portuguese grammar and of arithmetic, with legal weights and measures. In the female schools, instruction is also given in embroidery and other kinds of needle-work. In the schools of the second grade, the gospels are read and explained, and instruction is given in biblical and universal history, geography, especially that of Brazil, arithmetic, the elements of geometry and engineering, drawing, music and gymnastics. The number of schools is as yet entirely insufficient, and as the salaries paid are generally very small, there is a great want of competent teachers. The country owes many important reforms to the zealous minister of the interior, Correa de Oliveira (1871—1875), who has announced his intention to introduce compulsory instruction and to establish two national normal schools, of which there is as yet a great want, as the few institutions of the kind existing in the provinces can be regarded as only a small beginning of real normal instruction.

Before being allowed to teach, all persons have to pass both a written and an oral examination. The questions for the former are arranged by the council of studies at the beginning of every school year. This council consists of the general inspector of schools, of the two rectors of the *Collegio de Pedro II.*, and four elective councilors. There are also 5 assessors, 1 clerk with 4 assistants, and 17 delegates of parishes, of whom 11 belong to the city of Rio de Janeiro.—Pupils are admitted into the public schools from the 5th to the 15th year of age. The school hours are mostly from 8 to 11 A. M., and 3 to 5½ P. M. The school-books, which must be approved by the inspector general, are to a great extent translations from the French and the English; among them is a translation of *Peter Parley's Universal History*. The school is opened every day with a short prayer. Corporal punishment is not permitted. Every school is annually examined by a committee consisting of a delegate of the district as president, the teacher, and a third person appointed by the inspector general. The five most successful scholars receive rewards, consisting of books. The president of the committee makes a report on the examination to the inspector general.

According to the report of the minister of public instruction to the legislature for 1872, the number of public primary schools in the capital was 111, with 6,149 scholars, namely 3,900 boys and 2,249 girls. The number of public primary schools in the provinces is 3,491, namely 2,343 for boys, and 1148 for girls, attended by 106,705 scholars, namely 75,594 boys, 29,096 girls, and 2,015 whose sex is not stated. The number of private primary schools is 711, with 19,162 pupils. The total sum expended annually in the provinces for public instruction was 3,362,687 milreis (about $1,836,000).

The model secondary school of Brazil is the *Collegio de Pedro II.* at Rio, which was organized in 1854. It consists of 2 separate institutions, one of which is a boarding and the other a day school, each with its own rector. The number of students was 351; of whom 221 were day scholars and 130 boarders. Besides this college, there were in the city of Rio de Janeiro 60 private secondary schools,—30 for boys, 25 for girls, and 5 for both sexes. The course of instruction in these institutions varies somewhat, but in most of them the following subjects are taught: Portuguese, Latin, French, English, natural philosophy, arithmetic, algebra, geometry, history, geography, rhetoric, and poetry. The number of public secondary institutions in the provinces was 107, with 2,994 scholars, namely 2,916 boys, and 78 girls. The number of private institutions was 123, with an attendance of 5,089 scholars,—3,852 boys and 1,237 girls. The secondary institutions in the province are under the control of the provincial administration, and there is on that account a great lack of uniformity in their courses of instruction and their entire administration. The government of Brazil intends, however, to establish, as soon as practicable, state colleges on a uniform plan. For the German colonies in the province of São Paulo a "German lyceum" has been established; most of the secondary schools resemble, however, the French lyceums.

Brazil has as yet no university; but only two law faculties at Recife (Pernambuco) and São Paulo, with an aggregate number of 542 students, and two medical faculties at Rio de Janeiro and Bahia, with an aggregate number of 868 students. The establishment of a complete university at Rio de Janeiro is projected, and is urgently recommended by the minister of public instruction in his annual reports to the legislature.

Theological faculties are connected with nearly all the episcopal seminaries. Of other special schools, there are at the capital a business college (with 36 students in 1872), an institution for the blind (with 19 pupils), an institution for deaf-mutes (with 19 pupils); the Central School (scientific school), with which a military school is connected, a naval school and a naval artillery school, an academy of fine arts (with 187 students), a conservatory of music (with 139 students), and an imperial lyceum of arts and industry, belonging to the society for promoting fine arts, a sort of polytechnic school (with 1,233 students). In the provinces, there are several agricultural and industrial schools.

See Le Roy, in Schmid's *Realencyclopädie*, vol. IX., pp. 869—920; Kidder and Fletcher, *Brazil and the Brazilians* (8th edit., Boston 1866); Agassiz, *A Journey in Brazil* (1868), Wappæus, *Das Kaiserreich Brasilien* (Leipsic, 1871); *Annual reports of the minister of public instruction of Brazil to the legislature.*

BRIDGMAN, Laura, a remarkable blind deaf-mute, born at Hanover, N. H., in 1829, is particularly noted as the subject of a very successful course of training and instruction, by means of which she was taught to read, write, and converse with others, and enabled to acquire a knowledge of many useful branches of learning, besides becoming highly accomplished in music. She lost her sight and hearing at the age of two years; and when about eight years old, became an inmate of the Perkins institution for the blind in Boston, then under the care of Dr. Samuel G. Howe, so noted for his benevolence and devoted philanthropy. Finding that she possessed a high degree of intelligence, he resolved, despite the many discouragements of the case, to attempt her education. Through the sense of touch, he first associated, by constant repetition, objects with their names in relief letters, and when a few of these were learned and the relation thoroughly established, he taught her to recognize the separate letters composing each word, and then to construct the words herself from the letters. She was then taught the manual alphabet, and its use in naming objects; after which, through these channels of communication, she learned the qualities, uses, and relations of objects, as well as their names. Subsequently, she learned to write and to play upon the piano, in which she became very skillful, and acquired also a dexterity in needle-work and in the performance of many household duties. Her moral and religious education was more difficult; but this also was successfully accomplished, so that, in 1873, Dr. Howe could say of her: "She enjoys life quite as much as most persons do. She reads whatever books she finds in raised print, but especially the Bible. She makes much of her own clothing; and can run a sewing-machine. She seems happiest when she can find some person who knows the finger alphabet, and can sit and gossip with her about acquaintances, the news, and general matters. Her moral sense is well developed." This case possesses peculiar value in showing what can be accomplished by a devoted teacher despite the greatest natural obstacles to the acquisition of knowledge; and is a most encouraging example of the result of patience and address on the part of the educator. — See Barnard's *American Journal of Education*, vol. XI, s. v. *Samuel G. Howe*.

BRITISH COLUMBIA, a province of the Dominion of Canada, having an area of about 233,000 sq. m., and a population, in 1871, of 8,576 whites, 462 negroes, and 1548 Chinese; total, 10,586, exclusive of Indians, estimated at 35,000 to 40,000. It was created a distinct colonial government by an act of parliament passed Aug. 2., 1858. In 1866, Vancouver Island was united with British Columbia under one government; and, in 1871, British Columbia was admitted into the Dominion of Canada.

Although a common school ordinance was passed in 1869 and amended in 1870, the real foundation of the educational system in this province was the public school act of 1872. This law is an adaptation of the Ontario act, and its enactment was advised by the superintendent, himself a teacher trained in the Toronto normal school. Amendments were made to the first act in 1873, and a further act was passed in 1874. The act provides for an annual grant of $40,000 as a public-school fund, and for the appointment by the government of six persons, to hold office during its pleasure, as a board of education; also of an experienced person to be superintendent of education, who shall be *ex officio* chairman of the board. School districts are established and altered by the government, which also makes grants for teachers' salaries, the erection and furnishing of school-houses, and current expenses, and establishes other schools, without a district, where needed. The board of education prescribes a uniform series of text-books to be used, and provides for their supply to the schools, makes general regulations, examines teachers and grants certificates, appoints teachers and fixes their salaries, purchases and distributes school apparatus, and may establish high schools. The superintendent visits each school once a year, gives instruction, enforces the law, suspends, if necessary, a teacher's license till the meeting of the board, grants temporary certificates, settles disputed elections, and makes an annual report. An annual meeting for the election of trustees is held in each district in January. There are three trustees, of whom one retires at the annual meeting, and no trustee may be a superintendent or teacher. The trustees appoint the place of and call the annual meeting, on ten days' notice. No uncertificated teacher can be engaged in a public school. All public schools must be conducted upon strictly non-sectarian principles, no religious dogma or creed being permitted to be taught. Judges, clergymen, members of the legislature, and others interested are visitors. The compulsory clause provides that trustees may make by-laws, with the sanction of the superintendent, for requiring the attendance, at some school, of children between the ages of 7 and 14 years, with certain limitations as to distance, etc. The act of 1874 provides for the establishment of public boarding-schools. Such schools are managed by three trustees, who are appointed by the governor and hold office during his pleasure; and these officers appoint the teachers. The teachers under the board are paid on the following scale: For an average attendance of from 10 to 20 pupils, $50 a month; from 20 to 30, $60; 30 to 40, $70; 40 to 50, $80. When the average exceeds 50, the school is entitled to an assistant. Teachers whose schools are far inland receive $10 a month more.

The estimated number of children of school age was, in 1874, about 2,240, of whom 1,245 attended school some portion of the year; this was an increase of 711 over 1872. In consequence of the exceeding sparseness of the population, the boarding system has been introduced; and one such school was, in 1875, in successful operation. The compulsory clause of the act did not work successfully, its enforcement being optional with the local authorities. The total expenditure for the public schools for the year was $35,287, of which $22,219 was paid for teachers' salaries. An additional sum of $6,657 was expended by the superintendent in supplying books and apparatus. There were 36 teachers in the service. The establishment of high schools at Victoria and New Westminster was advocated by Superintendent John Jessop in 1875. The rising city of Nanaimo has a school of a higher grade (St. Paul's School), in connection with the Episcopal church. It was originally established in 1862, but was closed in 1870, and re-opened September 1874.—See Marling, *Canada Educational Directory and Yearbook for* 1876 (Toronto, 1876.)

BROOKLYN, capital of Kings county, New York, the third city, in population, in the United States. It is claimed for Brooklyn that, in common with New York, it has the honor of being the seat of the first free public schools within the present territory of the United States. Education received an early attention in the Puritan colonies of New England; but the pupils of their schools were burdened with a portion of the cost of instruction; while, in the Dutch colonies, tuition was entirely free. The first school-tax levied in Brooklyn (*Breuckelen*) amounted to 50 gilders, equal to about $20; and, in 1661, Carel de Beauvois, a recent emigrant from Holland, was appointed the first school-master, to take charge of the school, as well as to act as court-messenger, bell-ringer, grave-digger, and precentor (*voorzanger*). Other schools were established within the next few years. After the conquest of the New Netherlands by the English, in 1664, the free-school system was abolished; and for the next century and a half, the schools were supported only by their patrons. No addition to the number of schools appears to have been made until the commencement of the revolutionary period, when a fourth school was established, which was afterwards organized as Public School No. 4. Another school was established soon after the revolution. In all these schools, tuition was afforded in both English and Dutch down to 1800, and in the Bushwick and Gowanus school still later; for all the schools in Brooklyn up to this period were located in Dutch neighborhoods, and were almost exclusively under Dutch influence and patronage. As early as 1795, the legislature made an appropriation of $50,000, which was continued annually for five years, for the encouragement of the schools, and in 1805 established the common school fund. Of the privileges granted by these acts, Brooklyn did not avail herself till 1813, when the trustees of district No. 1, then the whole village, were elected. On May 6., 1816, Public School No. 1 was opened, the sum of $2,000 having been previously levied for its support upon the district, which then contained 552 children not attending private schools. This school was conducted upon the Lancasterian or monitorial system. Prior to 1843, the government of the schools in Brooklyn was vested in the trustees of each school district, of which at that time there were ten in the village of Brooklyn, and two in the town of Bushwick. In that year, the legislature passed an act empowering the common council to appoint two or more suitable persons to represent each of the school districts, who together with the mayor and county superintendent, should form the board of education of the city of Brooklyn. The appointment of three persons from some of the districts, with the addition of the mayor and the superintendent, made the board consist of 28 members. In 1850, the law was changed, fixing the number of members at 33, at least one to reside in each school district, and giving their exclusive election to the common council.

On the consolidation of the cities of Brooklyn and Williamsburg, by an act of the legislature passed April 17., 1854, the composition of the board was again changed. The law required the common council to appoint such additional members as the proportional increase of the inhabitants might demand. In pursuance of this provision, the number of members constituting the board was fixed at 45, of whom 13 should reside in the Eastern District (Williamsburgh). This number was sanctioned by a direct legislative enactment in 1862. By a subsequent enactment, in 1868, the members were divided into three classes, holding office for one, two, and three years, respectively; and the mayor is now required to nominate to the common council 15 members each year, and, if the same shall not be confirmed within twenty days, he may appoint absolutely. In 1853, S. S. Randall was elected city superintendent; but he served only a short time, being succeeded the same year by J. W. Bulkley, who continued to hold the office till 1873, when, in pursuance of a law passed that year, he was made associate superintendent, with Thomas W. Field, who was elected superintendent of public instruction.

School Statistics.—The growth of the system, since 1854, has been steady and rapid. In 1855, the number of schools was 30, with 312 teachers and an average attendance of pupils of 13,380. Ten years afterward, the number of schools was 38, the number of teachers 545, and the average attendance 22,610; in 1874, the number of schools increased to 49, the number of teachers to 1,099, and the average attendance to 40,193. The following items are reported for the year 1875:

Number of pupils enrolled.........	86,723	
Average daily enrollment..........	50,022	
Average daily attendance..........	45,248	
Number of teachers...............	1,121	
Number of months schools were open	10	
Amount paid for teachers' salaries.......		$671,108.18
do do for school buildings........		370,228.59
do do for books and stationery...		6,616.61
do do for colored schools.........		11,164.78
do do for other expenses.........		434,221.42
Total expenditure..........		$1,493,339.58

School System.—The system consists of a board of education of 45 members, a superintendent of public instruction and an associate superintendent. The city is divided into 31 districts, containing 34 grammar and intermediate school buildings, 11 separate primary schools and 4 colored schools; making the total number of the district schools 49; besides which there are 16 evening schools, (2 for colored pupils), 1 evening high school, and 9 corporate, or orphan asylum, schools. Most of the grammar departments of the schools are for both sexes. The school age is from 5 to 21. The members of the board of education are appointed for three years by the common council, on the nomination of the mayor, one-third of the board retiring each year. The board elects the superintendent and associate superintendent, whose term of office is three years, appoints teachers and determines their salaries, prescribes the course of instruction for the schools and the books to be used therein, and makes all needful regulations for the management of the same. It has the power to purchase sites and erect schoolhouses with the consent of the common council, to purchase text-books for use in the schools, and to sell or donate them to the pupils. Each school is under the particular charge of a local committee of the board of education.

The *course of instruction* includes six grades for the primary departments and six for the grammar departments. The studies prescribed for the former are reading, spelling, arithmetic as far as long division, elementary geography, and writing; in the latter, in addition to these studies, English grammar and composition, higher geography and arithmetic, etymology, the history of the United States, astronomy, penmanship, drawing, and book-keeping, together with natural philosophy and algebra as optional studies. Under the direction of the local committee and the superintendent, a supplementary course, including higher branches, may be pursued. This grade is, in fact, an academic course in all respects except the study of Latin. Vocal music is taught in all the grades. Each grade of study occupies one half of the school year, or about 5 months. There is no high school or college connected with the system; but the board of education has at its disposal 99 free scholarships in colleges and seminaries for the benefit of public-school pupils, the average value of each of which is about $100.

Examination and Qualification of Teachers. — The grade of scholarship of each teacher is fixed by the superintendent, after examination in one of the classes designated A, B, and C. As most of the appointments are made from the supplementary classes, the certificates graded B or C, are those usually granted at first. Those of grade C license to teach any primary grade; those of B, any below the fourth grammar grade. Certificates of the highest grade (A) are conferred upon those only who have presented evidence of superior efficiency as well as superior scholarship.

No provision exists for the instruction of teachers other than that afforded by the supplementary classes of the grammar schools.

Private Seminaries and Schools. — The private educational institutions of Brooklyn are very numerous, and many of them quite celebrated for their efficiency and high grade of scholarship. The *Packer Collegiate Institute*, incorporated in 1853, is a female seminary of high reputation. It was named after William S. Packer, from whose widow the institution received a large endowment. It has a corps of about 40 instructors, between 700 and 800 students, and a library of nearly 5,000 volumes. It has also a large number of free and endowed scholarships. The *Brooklyn Collegiate and Polytechnic Institute*, for males, was founded in 1854, with a capital stock subsequently increased to $100,000. It is under the management of a board of 17 trustees. In 1874, it had a corps of 30 instructors, and 605 students, of whom 136 were in the collegiate department. The value of its grounds, buildings, and apparatus was estimated at $164,000, and its receipts from tuition fees amounted to about $63,000. The *Adelphi Academy*, incorporated in 1869, is also an institution of a high grade of efficiency. In 1874, its corps of instructors numbered 29, and the whole number of students was 546. The value of its grounds, buildings, etc. was $160,000, and its annual income from tuition fees was about $40,000. The institution is non-sectarian. For the early history of education in Brooklyn, see D. T. Pratt, *Annals of Public Education in the state of New York* (Albany, 1872); Stiles, *History of the City of Brooklyn* (3 vols, N.Y., 1864—'70.)

BROWN, Goold, an eminent American grammarian, was born in Providence, R. I., in 1791, and died at Lynn, Mass., in 1857. He was a teacher for more than twenty years in the city of New York. His *Institutes of English Grammar* (N. Y., 1823), and *First Lines of English Grammar* (N. Y., 1823) have been more extensively used in the schools of this country than any other grammatical text-books. The edition of these works with Kiddle's *Analysis of Sentences* has still a very wide circulation. Goold Brown's *Grammar of English Grammars* (N. Y., 1851) is probably the most extensive and complete treatise on the subject ever published. This work contains a very valuable catalogue of works on English Grammar. See 10th edition with index, by Samuel W. Berrian (N. Y., 1871).

BROWN UNIVERSITY, at Providence, R. I. formerly called *Rhode Island College*, was founded in 1764, through the instrumentality of the association of Baptist churches at Philadelphia, and by the aid of certain prominent Baptists of Newport. A charter was obtained in 1764, one of the provisions of which was, "that into this liberal and catholic institution shall never be admitted any religious tests; but, on the contrary, all the members hereof shall forever enjoy full, free, absolute, and uninterrupted liberty of conscience; and that the public teaching shall, in general, respect the sciences, and that the sectarian differences of opinions shall not make any part of the public and classical instruction." Of the 12 members of the board of fellows, having the government of the college, 8, including the president, must be Baptists; and of the board of 36 trustees, 22 must be Baptists, 5 Friends, 4 Congregationalists, and 5 Episcopalians, representing the proportion of each denomination in the colony at the time of the charter. The first president of the college was the Rev. James Manning, D. D., who served till 1791. During this period, the seat of the college was fixed at Providence; and, during a part of the Revolutionary period, the operations of the institution were suspended, the college building being occupied by the state militia, and by the troops of Rochambeau. The Rev. Jonathan Maxcy, D. D., was the second president, who served from 1791 to 1802, when he resigned, and was succeeded by the Rev. Asa Messer, D. D., who held the position till 1826. During his incumbency, in 1804, the name of the institution was changed to Brown University, in honor of Nicholas Brown, from whom it had received the most munificent donations. Dr. Messer was succeeded in 1827 by the Rev. Francis Wayland, D. D., LL. D., who resigned in 1855, and was followed by the Rev. Barnas Sears, D. D., LL. D., who served till 1867, and was succeeded by the Rev. Alexis Caswell, D. D., LL. D. In January, 1872, he was succeeded by the present incumbent, the Rev. E. G. Robinson, D. D., LL. D. The institution has five college buildings and a mansion for the president. Its situation is commanding and salubrious, the inclosed college grounds covering a space of 16 acres. The value of its grounds, buildings, and apparatus is estimated at $1,500,000; the amount of its productive funds, including scholarships, is stated (1876) as $662,555. The average amount of scholarship funds exceeds $50,000.

In addition to the classical and scientific courses, there have been established departments of practical science, including (1) chemistry, applied to the arts, (2) civil engineering, and (3) agriculture. This is for the benefit of students who wish to prepare themselves for such pursuits as especially require the knowledge of the mathematical and physical sciences, and their applications to the industrial arts. There are two parallel courses of instruction for the degree of bachelor—of arts, and of philosophy, each extending through a period of three years. The one is largely composed of classical studies, the other substitutes for them a larger amount of scientific studies. Arrangements are made by which students have daily exercises in the gymnasium. The university library contains 45,000 volumes, the greater part of which has been collected within the last thirty years. It is especially rich in civil and ecclesiastical history, antiquities, bibliography, and patristics. Through means supplied by the munificence of John Carter Brown, a fire-proof building for the library is in process of construction, with accomodation for 150,000 volumes. There is also a valuable museum of natural history, containing about 35,000 specimens.

The corps of instruction includes 17 professors and other instructors; and the whole number of students in the university, in 1875—6, was 255. The cost of tuition is $75 per annum. Among the various forms of aid offered to students, there are about 100 scholarships. There are 58 scholarships of $1000 each, the income of which is given, under the direction of a committee appointed by the corporation, to meritorious students needing pecuniary aid.

BUCHTEL COLLEGE, at Akron, Ohio, was founded, in 1872, by the Universalists, in order to afford to students of both sexes equal opportunities for a thorough practical and liberal education. The full curriculum embraces a complete college course of four years, a thorough philosophical course of two years, a normal course, and a preparatory course. The corps of instructors, in 1874, included 15 professors and other instructors; and the whole number of students was 212, of whom 112 were in the collegiate department. The value of the college grounds, buildings, and apparatus is estimated at $250,000, and its productive fund amounts to about $25,000. The Rev. S. H. McCollester, A. M., is (1876) the president of the institution. The annual tuition fee is $30.

BUFFALO, a large and flourishing city in western New York, having a population, according to the state census of 1875, of 134,573.

Educational History.—The first school-district embraced the village of Buffalo, in which the first school-house was built in 1806. The first school tax appears to have been levied in 1818, for the purpose, probably, of rebuilding the school-house, burned, with the rest of the village, in 1813. In 1822, Millard Fillmore taught the village school. At the time of the incorporation of the city (1832), there were 6 districts, each having one small school-house and one teacher. In 1836—7, a law was passed authorizing the appointment by the common council of a superintendent; from which event dates the beginning of the school system. In 1838, the 7 school-districts were divided into 15, and a resolution was adopted to establish a common school in each, with departments according to its needs and numbers, and a "Central School, where all the higher branches necessary to a complete English education could be pursued;" and, in all these schools, education was to be entirely free. In 1839, five new and commodious school-houses were built. In 1853–4, important changes were made in the city charter, by which, and by ordinances of the city council in pursuance of the same, the system received its present organization. In 1873, Superintendent Larned endeavored to secure the passage of a law creating a board of education, to have the management of the schools; but the measure met with but little popular favor, and did not prevail.—The *city superintendents* have been as follows: Under election for one year by the common council, R. W. Haskins, N. P. Sprague, and O. G. Steele, successively, during 1837; Oliver G. Steele, 1838, –39, –45, and –51; Daniel Bowen, 1840, –46, and –49; Silas Kingsley, 1841; Samuel Caldwell, 1842 and –43; Elias S. Hawley, 1844, –47, and –48; Henry K. Viele, 1850; Victor M. Rice, –52 and –53; under the new law, electing for two years, Ephraim F. Cook, 1854—5 and 1856—7; Joseph Warren, 1858—9; Sandford B. Hunt, 1860—61; John B. Sackett, 1862—3; Henry D. Garvin, 1864—5; John S. Fosdick, 1866—7; Samuel Slade, 1868—9; Thomas Lothrop, 1870—71; Josephus N. Larned, 1872—3; William S. Rice, 1874—5, and re-elected for the term which expires Dec. 31., 1877.

School System.—By the charter of 1853—4, the schools are under the control of the common council, and are free to all persons between the ages of 5 and 20 years. Colored children are admitted to any of the schools, but one colored school must be maintained. The cost of sites and school-houses must be assessed on the property of school-districts; but all other expenses are paid out of the general fund or by tax. The Central High School is entitled to share in all appropriations to academies; and the districts participate in the apportionment to public schools.—The *superintendent of education* is elected on general city ticket for two years. He is the chief executive officer of the department of education; and his duties are, to recommend courses of study, to hire teachers, who are subject to his directions; under direction of the city council, to contract for lots, houses, and supplies, and to carry into effect all provisions relating to education.—The course of study is divided into ten grades, and embraces, besides the common branches, drawing, composition, vocal music, and, in some schools, German.

Educational Condition.—The number of school-districts is 35; of schools with one department, 14; with two departments, 11; with three, 17; of night schools, 7. The principal items of *school statistics* for the year ending Dec. 31., 1876, are as follows:

Whole number of children enrolled (estimated)		40,000
No. of pupils registered in day schools........		23,000
No. of pupils registered in night schools.......		1,121
No. of teachers employed....................		420
Receipts from school fund....	$77,552.27	
" by tax..............	237,597.73	
Total...........		$315,150.00
Total expenditures................		$313,750.00

Of the 42 principals employed, 33 are males, with salaries ranging from $550 to $1,450; and 9 are females, with salaries ranging from $550 to $800. The salaries of assistants range from $400 to $650. The amount paid for salaries is $275,000.

In the *Central School*, the courses of study are a shorter English course, requiring two years, and an English and a classical course, each requiring three years. The Regent's examination in full admits to the two regular courses. In 1876, there were in attendance 159 boys and 220 girls; and the number of teachers was 14, the amount of whose salaries was $15,750. The state normal school at Buffalo was opened in 1871. The common council appropriated $45,000, and the supervisors of the county, an equal sum, for the erection of a building, on a site comprising 5 acres, given for the purpose by Jesse Ketchum, for the nominal sum of $4,500. Pupils are admitted, at 16 years of age, on the recommendation of the local school officers, and after passing an examination in the common English branches.

Parochial Schools.—There are 15 parochial schools for instruction in common branches, in connection with the Roman Catholic Church, 2 colleges, and several convent and Sisters' schools. In the first, during the year ending Dec. 31., 1876, there were 7,976 pupils, taught by 98 teachers. Canisius College is conducted by Jesuit Fathers, assisted by lay teachers; in 1876, it had 146 students. St. Joseph's College is under the charge of Christian Brothers, with 300 pupils.

Private Schools.—The Buffalo Female Academy was organized in 1851. It is under the control of a board of trustees, and has a collegiate department, academic departments, and a primary department. Other schools are, the Heathcote school for boys, and the Buffalo Classical School, the latter a school of long standing. Besides these, there are numerous other schools, Catholic and Protestant, both for boys and for girls.

BUGENHAGEN, Johann, one of the leaders of the German reformation in the sixteenth century, was born in 1485, at Wollin in Pomerania, and died in 1558. Next to Melanchthon, he was the most prominent educator among the fathers of German Protestantism. When only 18 years of age, he was placed at the head of the school of Treptow, which soon became so famous that it attracted scholars from various countries of northern Europe. In 1517, he was called by the abbot of Belbuck to assume the office of teacher of theology to his convent. After joining the reformation, he was for some years professor at the university of Wittenberg; but from 1536 until his death, his time was chiefly devoted to carrying on the work of the Reformation in various countries. In connection with every Protestant church, he endeavored to establish a Protestant school, and he is believed to have thus done more for the spread of education in Protestant Germany than even Luther himself. The church established by him in the duchy of Brunswick served as a model for a large number of others. The church constitution of this duchy, drawn up by him in 1528, provides for the establishment of two Latin schools for boys, each with three teachers, of two German schools for boys, and four girls' schools. The instruction given in these schools consisted chiefly in teaching the catechism and singing; but in the girls' schools, biblical history was an essential branch. The poor were to be aided as much as possible to obtain admission into these schools, and the heads of the parish were to exercise a careful supervision over the education of all the children. In the villages and towns, the sexton was expected to give instruction to the lowest classes. To aid this work of teaching, Bugenhagen translated the Bible into Low German, very closely following the High German translation of Luther.

BUREAU OF EDUCATION, National, an office in the Department of the Interior of the government of the United States, organized in pursuance of an act of congress approved March 2., 1867. This office had its rise in the need, long felt by leading educators, of some central agency by which the general educational statistics of the country could be collected, preserved, condensed. and properly arranged for distribution. In February, 1866, a memorial was presented to the House of Representatives, asking for the establishment of a national bureau of education. This memorial emanated from the National Association of State and City School-Superintendents, and enumerated the following as the means by which the proposed bureau could promote the interests of education: "(1) By securing greater uniformity and accuracy in school statistics, and so interpreting them that they may be more widely available and reliable as educational tests and measures; (2) By bringing together the results of school-systems in different communities, states, and countries, and determining their comparative value; (3) By collecting the results of all important experiments in new and special methods of school instruction and management, and making them the common property of school-officers and teachers throughout the country; (4) By diffusing among the people information respecting the school-laws of the different states; the various modes of providing and disbursing school-funds; the different classes of school-officers and their relative duties; the qualifications required of teachers, the modes of their examination, and the agencies provided for their special training; the best methods of classifying and grading schools, improved plans of school-houses, together with modes of heating and ventilation, etc.,—information now obtained only by a few persons and at great expense, but which is of the highest value to all intrusted with the management of schools; (5) By aiding communities and states in the organization of school-systems in which mischievous errors shall be avoided, and vital agencies and well-tried improvements be included; (6) By the general diffusion of correct ideas respecting the value of education as a quickener of intellectual activities, as a moral renovator, as a multiplier of industry and a consequent producer of wealth, and, finally, as the strength and shield of civil liberty." The act establishing the bureau prescribes that its operations shall be the "collecting of such statistics and facts as shall show the condition and progress of education in the several states and territories, and the diffusing of such information respecting the organization and management of school-systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school-systems and otherwise promote the cause of education."

Henry Barnard, LL. D., was the first commissioner of education, appointed in pursuance of this law; and under him the Bureau was organized and put in operation. Two reports were issued by him, that of 1867—8, and a special report on the District of Columbia; but for several reasons, chiefly the want of congressional co-operation and support, the operations of the Bureau, during this period, were neither extensive nor of considerable importance. On the 17th of March, 1870, Dr. Barnard retired, and was succeeded by John Eaton, Jr., the present incumbent, during the six years of whose administration, the Bureau has accomplished a vast amount of work. Besides the five annual reports, from 1870 to 1874, it has issued twenty-seven circulars of information, containing important summaries of intelligence relating to the condition of education in foreign countries, or upon other interesting educational topics.

The relation of the Bureau to the educational authorities of the country, which are exclusively under state control, is entirely ancillary. Its office is to aid by dispensing information, not to direct. It has no power to demand information; but is entirely dependent upon the courtesy of the state and city authorities and officials in affording proper replies to its interrogatories. The extent of its operations in gathering information will be apparent from the following statement extracted from a recent "Statement," issued under the authority of the Bureau itself :—

"The field for exploration it presents embraces the thirty-seven states and eleven territories. To make the exploration thorough, the bureau must examine every school law, and mark whatever change or amendment may be made, including the charters of city boards of education, with their rules and ordinances. It must sift, for things deserving general attention, the reports of every state-, county-, and city-superintendent of the public schools that may be sent to it. It must get at the work not only of the public high schools, but also of the private academies and special preparatory schools. It must look through the annual catalogues and calendars of a long list of colleges and universities; schools of divinity, law, medicine, and science; reformatories, and institutions for the training of the deaf and dumb, the blind, and the feeble-minded—selecting from each what is worthy to be noted in the way of either improvement or defect. And, besides all this, it must keep its eyes wide open to observe the growth of libraries, museums, schools of art or industry, and other aids to the proper training of the people; must see what the educational journals say as to school-matters in their several states; must note what may be worth preserving in the utterances at teachers' associations and gatherings of scientific men; and must keep up, with reference to all these things, an incessant correspondence with every portion of the country. In fact, its correspondence reaches, more or less directly, to the 48 states and territories, to 206 cities, 132 normal schools or departments, 144 business colleges, 54 kindergärten, 1,455 academies, 103 schools especially engaged in preparing pupils for the colleges, 240 institutions for the higher training of young women, 383 colleges and universities, 73 schools of science, 115 of theology, 37 of law, and 98 of medicine; with 585 libraries, 26 art museums, 53 museums of natural history, 40 institutions for the instruction of deaf-mutes, 28 for the blind, 9 for the feeble-minded, 400 for orphans, and 45 for the reformation of misguided youth."

The diffusion of information by the Bureau takes a wide range, embracing not only full and statistical information in regard to the progress and condition of education in the United States, but as to the "ministries of instruction in the several European states, as to the useful suggestions in foreign educational reports and journals, and as to the systems of training in the universities, gymnasia, real-schools, schools of architecture and drawing, and the various institutions of primary education in every civilized community or state." The mode of disseminating this intelligence is, (1) By *annual reports*, each giving abstracts of the various classes of instruction (such as primary, secondary, superior, professional and special), with lists and statistics of noticeable institutions and estimates of progress or retrogression in various lines; (2) By occasional *circulars of information* (of which 27 have been issued up to 1876); and (3) By written answers to inquiries on school matters addressed to the commissioner. The amount of intelligence conveyed, by these means, with respect to educational systems, school laws, and important institutions, is such as has never previously been made generally accessible in the United States, and such, certainly, as no single state, much less any single individual or private association, could have obtained, without an expenditure which it would have probably been either unable or unwilling to incur.

While there is a very emphatic and general opposition in the United States to the establishment of any national system of education, or to conferring upon the general government the right to interfere in any way with the state systems, there has nevertheless been generally manifested a full appreciation of the value of the Bureau of Education as now constituted, and a cordial disposition to supply the Commissioner with the fullest replies to his inquiries for information, as well as with copies of all educational documents issued under state or city authority. In bringing about this very desirable state of things, of course, the manner in which the affairs of the Bureau have been administered has had much to do. It would be easy by an injudicious course to bring about an antagonism that would most effectually prevent any further progress.

An educational library of probably unsurpassed richness is another of the valuable fruits of the work of the Bureau. This is, in part, composed of choice collections bearing on the history and art of education in this country and abroad; in part, of the accumulations made in the process of annual examination into the condition of public-school instruction, the state of academies and colleges, and the rise and work of professional and special schools. This library, it is said, for purposes of practical investigation, is superior to any other educational library in existence, except, perhaps, the one at Vienna. With its vast accumulations from year to year, its value as a library of reference is constantly increasing. — See *Reports of U. S. Commissioner of Education*, 1870—4; also *National Bureau of Education; its History, Work, and Institutions*, a pamphlet by ALEX. SHIRAS, D.D., prepared under the direction of the Commissioner of Education (Washington, 1875).

BURGHER SCHOOL (Ger. *Bürgerschule*), a name given to many public schools of a higher grade in the towns of Germany, designed to educate the children of citizens for a practical business life. Formerly, the course of instruction in the town schools embraced the ancient languages; and the study of Latin, in particular, was frequently, even as late as the eighteenth century, regarded as the most important part of the entire course. In the last quarter of the eighteenth century, a radical reform began gradually to be effected. Teachers and school authorities investigated the comparative usefulness of the different branches of instruction for all those classes of towns-people who did not follow one of the learned professions, and the conclusion generally reached was, that natural science, geography, history, and similar studies are of very much higher advantage to the future citizen, than a knowledge of Latin. The organization of the town schools was gradually changed, in accordance with these principles; and, on Jan. 2., 1804, the first *Bürgerschule* was opened at Leipsic. Since that time, a large number of flourishing schools bearing this name have sprung up in the large cities. In the further development of the school system of Germany, the term, as a distinctive name, has to a great extent been dropped, and the schools formerly thus designated constitute, under various names, the higher division of the *Volksschulen*. The name *höhere Bürgerschule* is identical with the more common *Realschule*. (See Real School, and Germany.)

BURLINGTON UNIVERSITY, at Burlington, Iowa, was founded by the Baptists, in 1852. In 1875—6, it had 60 students, and a corps of 8 professors and other instructors. The value of its grounds, buildings, and apparatus is about $40,000; its endowment fund, about $20,000. Prof. L. E. Worcester has been the president of the institution since 1872. The annual tuition fee is $42.

BUSBY, Richard, D. D., one of the most noted of English pedagogues, was born in Lutton, Northamptonshire, in 1606, and died in 1695. He was educated in the Westminster School and Oxford University; and, in 1640, was appointed head-master of Westminster, in which position he continued for more than fifty years. It was here that he achieved his great fame as the most successful school-master of his age, and the most imperious one too, for his frequent and excessive use of the rod or birch has made his name proverbial. Within his school he was the most arbitrary of despots; and it is said that when the king entered his school-room, he would not remove his hat, being unwilling that the boys should deem any one his superior. When taxed with the severity of his punishments, he pointed to the many illustrious and learned men whom he had educated in his school, among whom at one time he could number no less than sixteen bishops. Dr. South, one of the most eminent of his pupils, was at first a very dull, obstinate, and intractable scholar; but Dr. Busby discerned his latent genius, and used his utmost efforts to bring it forth, in the doing of which the rod was by no means spared, and the master lived to enjoy his pupil's fame as one of the most brilliant pulpit orators of his time. Dr. Busby's works as an author were confined to some text-books, which he compiled for the use of schools.

BUSINESS COLLEGES, as now existing in the United States, are the product of individual effort directed to the supplying of a public want. As distinct institutions, they are the outgrowth of the past thirty years, although schools and private classes for instruction in the commercial branches — particularly book-keeping and penmanship—have been in vogue for a much longer time. Thirty years ago, most of this kind of instruction was given by a few private teachers in the large cities (who generally united the duties of teacher with those of public accountant), and by itinerant professors who traveled from place to place, teaching special classes for a limited number of lessons at low rates. These teachers or professors were often authors of books or of systems claiming pre-eminence over the ordinary school methods; and by confining themselves to the work in which they excelled, they undoubtedly accomplished much good. The utility of this practical training was readily apparent, and as a matter of self-protection no less than of self-respect, the established schools, public and private, were induced to recognize the importance of these useful branches, and to supply instruction therein in more liberal measure. There sprung up also, in the large cities and villages, schools, making the practical studies a specialty, and calling themselves *commercial* or *mercantile colleges*. Some of them were organized under state charters and authorized to issue diplomas in due form. These institutions placed themselves before the public as professional schools, assuming the same relations to the future business-man as those which already existed between the medical, law, and theological schools, and the members of those various professions.

Among the pioneers in this work, may be mentioned R. M. Bartlett of Cincinnati, Peter Duff of Pittsburgh, James Arlington Bennett of New York, and George N. Comer of Boston. As there was no unity of action among these teachers and no means of measuring their individual efforts, either absolutely or relatively, it is impossible to say what was the prescribed course of study adopted, or to what extent the various schools made good the claim to their chosen title. But the respect in which they were held by the community, and the fact that they supplied in a good measure preliminary training which had heretofore been obtainable only in counting-houses, is presumptive evidence that they deserved the recognition and support which they received. The time required for a full course of study in these pioneer schools varied, according to the capacity of the student, from three weeks to three months; whereas, the reputable business colleges of to-day do not pretend to graduate their students in less than from one to two years. These facts alone must be accepted as evidence of a substantial increase in the body of learning which makes up the college course. Not only have the main studies, — book-keeping, penmanship, and arithmetic, been materially enlarged and intensified, but other not less important branches have been added, the purpose and effect of this being to give form and symmetry to the training, and to meet the increased demand for broadly educated accountants and clerks. Among the branches which have been added are political economy, including civil government; commercial law; correspondence, embracing the elements of English composition and practical grammar; phonography and modern languages, particularly German, French, and Spanish. Some institutions have also made a prominent feature of telegraphy. But the feature which attracts most attention, both from its novelty and its usefulness, pertains to the practical methods of applying instruction under the guise of real business operations. This plan embraces the organizing of the advanced students into business communities, so adjusted in their workings as to represent the varied interests and intercourse which exist in the outside world. Thus, certain members are established as merchants, others as agents or brokers, others as manufacturers, others as importers and jobbers, others as bankers, etc.; each in his turn serving in these several relations, and all together performing the functions of a working community. Not only is this method carried on in the separate schools, but some of the most prominent among them in the larger cities have established a system of intercommunication by which the work is widely extended through postal correspondence. Thus representative merchandise is really shipped by the members of one school to those of another, drafts are drawn, remittances made, extended business settlements effected, and, in fact, all the minute details of a varied business are carried on. As will be seen, this extended correspondence and co-operation give the best opportunity for effective criticism and discipline, and may be made as completely the rehearsal of the future business man for his life-work, as is the clinical practice of the medical college or the moot-court of the law school.

The business colleges of America differ in important respects from those of European countries. The commercial colleges of Germany and France are less professional in their design and less practical in their operations. In France particularly, the commercial schools are under government patronage and direction, and aim to supply not only well-trained clerks for the civil service, but educated sailors and scientific shipbuilders as well. The course of study covers three years, and is definitely prescribed by the government. The American business schools, on the other hand, having no public recognition, except as the result of individual work—with no official supervision to inspire or control their actions, are as various in their methods and their degrees of excellence as are other purely business enterprises. And there is little doubt that, like other business enterprises, they will continue to meet the increasing demand for faithful work, until they shall become as much a part of our educational system as are the classical and professional schools and colleges, whose purposes and scope are more definitely fixed in the public mind.

The report for 1874 of the U. S. Commissioner of Education showed that there were 138 of these institutions in the different states of the Union, in 126 of which there were 577 instructors, and 25,892 students, of whom 2,867 were females.

BUTTMANN, Philipp Karl, a German professor of classical literature, was born at Frankfort on the Main, in 1764, and died in Berlin, in 1829. After completing his studies at the university of Göttingen, he was for a time tutor of the princes of Anhalt-Dessau, became, in 1789, assistant secretary, and in 1796 secretary of the royal library of Berlin, in 1800 professor at the *Joachimsthal Gymnasium*, and in 1811 librarian and member of the academy of science. He was also, from 1803 to 1812, editor of the *Spener'sche Zeitung*. Buttmann is the author of three Greek grammars, two of which, prepared for the gymnasia (*Griechische Grammatik*. Berlin, 1792, 22d edit., 1869, *Griechische Schulgrammatik*, Berlin, 1816, 17th edit., 1875), have had for many years an almost exclusive sway in many learned institutions. Both have been translated into English. He also published *Lexilogus*, an explanation of Greek words, especially for Homer and Hesiod (Berlin, 1818—1825, Engl. transl., 3d ed., London, 1846); *Mythologus*, a collection of essays on the legends of antiquity (Berlin, 1828—1829), and editions of several Greek and Latin classics.

CADET. See Military Schools, and Naval Schools.

CADETS' COLLEGE, the name of a department of the Royal Military College at Sandhurst, England. Its objects are, to give a sound military education to youths intended for the army, and to facilitate the obtaining of commissions when the education is completed. Application for admission is made to the commander in chief, who, on the production of satisfactory certificates and references, gives permission to place the name of the youth applying on the list of candidates. The age for admission is between 16 and 19. The course for admission includes English composition, modern languages, mathematics, geography, history, the natural and experimental sciences, and drawing. After examination, the candidates are reported to the commander in chief in the order of merit; and those who have the highest standing are admitted as cadets as soon as vacancies occur in the college. When admitted, they study for two years a great variety of subjects connected with military science and practice; and when the course is completed, the cadets are eligible to the reception of commissions in the cavalry and infantry, a certain number of which are placed at the disposal of the college.

CALIFORNIA was a part of the territory which was ceded to the United States at the close of the Mexican war. It was admitted into the Union as a state Sept. 9., 1850.

Educational History.—The foundation of the school system of the state was laid by the constitutional convention at Monterey, in 1849, by a provision for appropriating for school purposes the proceeds to be derived from the sale of the 500,000 acres of land, granted by Congress to new states, for the purpose of internal improvements. This measure was carried after a sharp struggle, and by one vote. The constitution also provided for a superintendent of public instruction, and empowered the legislature to provide for a system of common schools, to be kept open at least three months in the year. The first legislature, of 1849—50, took no action on school matters; but, in 1850—1, the second state legislature passed a crude law providing for the apportionment of the state school moneys, *pro rata*, to sectarian and religious as well as to public schools. In 1852—3, Hon. Frank Soulé drafted and secured the passage of a more complete school law, which remained in force until 1855, when Hon. D. R. Ashley secured the passage of a revised law which contained stringent provisions against the apportionment of public moneys for the support of sectarian schools. This law was not materially changed until 1864, when the state superintendent secured the passage of important financial amendments which more than doubled the school revenue. Among these provisions was the levying of a state tax of five cents on the hundred dollars.

A state normal school was organized in 1862, and was located in San Francisco. In 1866, "an act to provide for a system of common schools," drafted by the state superintendent, was passed under the title of the *Revised School Law*. This law remains, with a few unimportant changes, on the statute books at the present day. In 1869, the state university was established at Berkeley, near Oakland. In 1874, the state-tax was increased so as to yield a revenue of $7 per unit of the school census,—a revenue which, in 1875, amounted to $1,100,000.

The first public school was opened in San Francisco, Dec., 1849, by John C. Pelton, afterwards city superintendent of San Francisco. In 1866, the whole state attained to a *free-school* system, *rate-bills* being abolished by law. Previous to this time, most of the country schools eked out their limited amount of school moneys by monthly rates of tuition. The total amount of money expended for public school purposes from 1851 to 1875 was $20,000,000.

State Superintendents.—The following is a list of the state superintendents: (1) John G. Marvin, from 1851 to 1854; (2) Paul K. Hubbs, from 1854 to 1857; (3) Andrew J. Moulder, from 1857 to 1863; (4) John Swett, from 1863 to 1868; (5) O. P. Fitzgerald, from 1868 to 1872; (6) Henry N. Bolander, from 1872 to 1876; (7) Ezra S. Carr, the present incumbent, who entered upon his duties in 1876.

School System.—The schools of the state are under the supervision of a superintendent of public instruction, county superintendents, and city superintendents, all elected by popular vote. The *state board of education* is composed of the governor, the state superintendent, and six county superintendents, all being members *ex officio*, and has power to adopt a uniform series of text-books, to issue life diplomas, to adopt a course of studies for the schools of the state, and to make rules and regulations for the government of the schools. The *city boards of education* are elected by the people directly, under special city charters and local school laws. Besides these, there are boards of district school trustees, chosen at special school elections, for the term of three years, one trustee being elected annually. There are boards of examination for the state, for the counties, and for the cities. The state board of examination is composed of the state superintendent and four professional teachers appointed by him, at a salary of $200 a year, and has power to prepare questions for the state, city, and county examinations, and to issue, on the result of such examinations, *educational diplomas*, valid for 6 years, and *first*, *second* and *third grade certificates*, valid for 4, 3, and 2 years, respectively. The *county boards of examination* are composed of the county superintendent, and from 3 to 5 professional teachers, holding first grade certificates, appointed by the county superintendent, for the term of two years, at a compensation of $3 a day, and traveling expenses. They are authorized to hold quarterly county examinations, and to issue first, second, and third grade certificates, valid for 3 years, 2 years, and 1 year, respectively. The *city boards of examination* are composed of the city superintendent and four professional teachers, holding educational diplomas, and elected by the city board of education. Their powers are similar to those of the state and county boards. All boards of examination must be composed exclusively of professional teachers.

The *schools* must be kept open at least six months in the year to secure the state apportionment, and to all children from 5 to 21 years of age. Separate schools may be established for colored children at the option of the local boards. The daily school sessions must not exceed six hours, and, for primary children under 8 years of age, must not exceed 4 hours. For district school libraries, there is an allowance of $50 a year, out of the state apportionment, to be expended by the trustees. No sectarian or denominational doctrines can be taught in the schools. There is a compulsory education law, but no provisions for properly enforcing it.

The *school revenue* consists of the annual interest of the state school fund, invested in 6 per cent and 7 per cent bonds. This fund amounts to $1,737,500, and the annual interest to $97,560. There is a state tax sufficient to raise $7 for each child between the ages of 5 and 17, as shown by the last preceding school census, amounting, in 1875, to $1,100,000; a county school tax, at a rate not less than $3 per unit of the school census; nor exceeding 50 cts. on each hundred dollars of the county assessment roll. The amount raised from the county and city school tax in 1875 was $1,115,000. Besides these, there is a district school tax, submitted to local vote, for building purposes, or for maintaining schools, not to exceed, in any one year, $1 on each $100.

There is no supervision by school inspectors. County superintendents are required to visit and examine every school once a year, but this is merely nominal. Each school district has a board of three trustees; and incorporated cities have special boards of education, as well as city superintendents.

The *salaries of teachers* are as follows: Average monthly salary of male teachers $84.93; of female teachers, $68.01.

The *course of instruction* as prescribed by law for the public schools, must include the following branches of study: reading, writing, spelling, arithmetic, grammar, geography, the history of the United States, physiology, natural history, drawing, and music. There is a course of study adopted by the state board of education; but as there is no way to enforce it, but little attention is paid to it in the country districts. Each city has its own special course. In San Francisco, German and French are taught in a part of the primary and grammar departments. The high schools have the usual course of study in order to prepare pupils for admission to the state university.

Educational Condition.—The total number of school districts in the state is 1579. The number of schools in each of the three grades is as follows: state university, 1; high schools, 14; first-grade (grammar) schools, 875; second-grade (intermediate) schools, 770; third-grade (primary) schools, 545; total number of schools, 2,205.

Besides these, there are public evening schools in San Francisco, free to men and boys, and kept open 10 months in the year. These schools are graded, with special classes in book-keeping and drawing. The number of teachers, in 1875, was 25; of pupils, 1,100.

The following are the principal items of the school statistics for 1875:

Number of pupils enrolled	130,930
Average daily attendance	78,027
Number of teachers, males	1,033
" " " females	1,660
Total receipts	$3,390,359.
Total expenditures	$2,658,241.

Normal Instruction.—The State Normal School was organized in 1861, at San Francisco, but in 1870 was removed to San José. The building was erected at a cost of $250,000. This school is open to both sexes, and is entirely free. The number of students in 1875 was 240, mostly young women; the number of instructors was 9. The annual cost of the school is about $20,000. The total number of graduates, from its foundation to 1876, was 378.

Secondary Instruction.—There are 14 high schools in the state, of which 2 are located in San Francisco, one for girls, and one for boys. There is one in each of the following cities: Oakland, Sacramento, Stockton, Los Angeles, San José, Vallejo, Petaluma, Grass Valley, Nevada, Marysville, Santa Clara, Santa Cruz, and Alameda. These schools, which are preparatory to the state university, contain 1,500 pupils, taught by 43 teachers. Besides the high schools, there is a large number of flourishing private schools, of which some are for boys exclusively, others for girls, and some for both sexes.

Denominational Schools.—The denominational schools are quite numerous and extensive. In San Francisco, six Roman Catholic schools give instruction to 600 boys and 850 girls; besides which, the *Presentation Convent School*, for girls, has 700 pupils and 26 teachers; and the *Sacred Heart Presentation Convent*, 750 pupils and 26 teachers. The *Academy of Notre Dame*, at San José, has 550 pupils and 30 teachers. Other Catholic schools in various parts of the state give instruction to 1,385 pupils. The Protestant schools in various parts of the state give instruction to about 1,500 pupils.

Superior Instruction.—The *California State University* (q. v.) crowns the public school system, being entirely free in all its departments. Other institutions of a similar grade are included in the following list:

Name	When founded	Religious Denomination	Location
California College	1871	Baptists	Vacaville
Christian College	1872	Christians	Santa Rosa
Pacific Meth. College	1862	Meth. Ch. S.	Santa Rosa
Sacred Heart College	1873	Rom. Cath.	San Francisco
St. Ignatius College	1855	Rom. Cath.	San Francisco
SantaBarbaraCollege	1871	Indep. Prot.	Santa Barbara
St. Mary's College	1861	Rom. Cath.	San Francisco
Santa Clara College	1851	Rom. Cath.	Santa Clara
Univ. Mound College	1859	Presbyt.	San Francisco
University of Cal.	1869	Non-sect.	Berkeley
Univ. of the Pacific	1851	Meth. Epis.	Santa Clara

Special Instruction.—The principal institutions for special instruction are the following: The California Institute for the Deaf and Dumb and the Blind, near Berkeley, established in 1860, and supported by the state; the Pacific Theological Seminary (Congregational), at Oakland; the Theological Seminary, at San Francisco; the School of Design, at San Francisco, organized in 1873; besides which, there is the medical department of the University of California, the Medical College of the Pacific, and the California College of Pharmacy.

There is no state reform school, but the San Francisco Industrial School serves the purpose of one, as minors from other counties may be committed to its care on the payment of a stipulated sum. The school connected with this institution is well graded and equipped, and the buildings for the accommodation of its different departments are large and spacious.

Teachers' Associations.—The first state teachers' convention was held in San Francisco, in Dec., 1854; the first teachers' institute met in San Francisco, May, 1863, under the direction of State Superintendent Moulder. The third state institute, in 1863, gave a marked impulse to educational interests. The California State Educational Society was organized in 1863, with John Swett as president. It admitted to membership only holders of state educational diplomas. This society for five years controlled the *California Teacher*. In 1875, a state educational association was organized at San José.

Educational Literature.—The first educational journal was the *California Teacher*, commenced in July 1863, published under the general control of the State Educational Society, and, edited, for the first four years, by John Swett and Samuel I. C. Swezey. It was saved from a speedy termination by a state subscription. In 1873, it was taken from the control of the society, and became the organ of the state superintendent. In 1876, the state subscription of $4,000 was withdrawn, and the journal expired with the official term of Supt. Bolander. The *Pacific Educational and Home Journal*, was commenced in April, 1877; and *Fitzgerald's Home Newspaper and Educational Journal*, in March, 1877. The *History of the Public School System of California*, by John Swett, was published in 1876.

CALIFORNIA COLLEGE, at Vacaville, Cal., was founded in 1871, by the Baptists. It includes both collegiate and theological departments, has an endowment fund of about $20,000, a corps of 8 instructors, and 160 students, of whom 50 belong to the collegiate department. The value of its grounds, buildings, etc., is estimated at $25,000; and its library contains about 2,500 volumes. A. S. Worrell, A. M., is (1876) the president of the institution. The cost of tuition per annum is about $50.

CALIFORNIA, University of, at Berkeley, 4 miles N. of Oakland, was organized in 1869, and forms a part of the public educational system of the state. It is under the control of a board of 22 regents, of which the governor, lieutenant governor, state superintendent of public instruction, speaker of the assembly, president of the state agricultural society, and president of the mechanics' institute of San Francisco are *ex officio* members. It is open to both sexes, young women being admitted on the same terms as young men. Its endowment fund consists of the 150,000 acres of land granted by Congress in aid of agricultural schools, and the 72 sections, comprising 46,080 acres, set apart for a "seminary fund" from the public school lands. The 150,000 acres were sold at an average price of $4 per acre, yielding $600,000; the seminary fund amounted to $35,000, making a total of $635,000. The state appropriated $300,000 for the erection of suitable buildings; and the site of 160 acres of land, on the hills at Berkeley, overlooking San Francisco, was given by the College of California, which was merged in the university. The state appropriates for current expenses $50,000 a year in addition to the revenue of the endowment fund. In 1875, James Lick endowed the university with $700,000, to be expended in erecting and maintaining an observatory on Mt. Hamilton, in the coast range, 90 miles south of Berkeley. The departments, or *colleges*, fully organized are the *college of letters*, or the classical department, and the *scientific school*. Little has been done as yet, towards organizing the *agricultural college*, or the *colleges of mines* or *mechanics*. The *college of medicine* is in San Francisco, under a separate faculty. It consists of the Toland medical colleges, nominally transferred to the university. The total number of students in December, 1875, was 366, of whom 40 were young women. The first president of the institution was Henry Durant, the founder of the College of California, who died in 1874. He resigned his presidency in 1872, and was succeeded by Professor D. C. Gilman of Yale College.

CALISTHENICS (Gr. καλός, beautiful, and σθένος, strength), a system of physical exercises for females, designed to promote strength and gracefulness of movement; or, by assisting the natural and harmonious development of the muscular system, to improve the health, and add to the beauty of personal appearance. Calisthenic and gymnastic exercises are based on the same principle,—that exercise is essential to the proper development of the physical as well as mental faculties, and to the maintenance of their healthy condition; and that, in education, it is requisite that suitable exercises should be systematically employed. The only difference between calisthenics and gymnastics consists in the adaptation of the former to the physical education of girls; and, of course, the exercises employed require a less violent muscular action. These exercises may be practiced with or without apparatus. The latter, which should be employed first, consist in such movements as bring into regular and systematic operation all parts of the body. The movements are neither violent nor complicated, being in fact only such as are required in the ordinary exercise of the limbs. Their advantage over those required in the common active sports of girls consists in their systematic regulation so as to ensure an equal and regular action of the muscles; while long continued sports of any particular kind, such as trundling the hoop, using the skipping-rope, etc., have the reverse effect. Calisthenic exercises should, however, be so varied as to exhilarate the spirits as well as task the muscles, or they will lose much of their beneficial effect; since while the body is exercised, the mind must be interested. The simplest apparatus used consists of wands or poles, dumb-bells, backboards, elastic bands with handles, light weights, etc. With such instruments, a great variety of beneficial, graceful, and interesting exercises can be performed; and when whole classes are exercised simultaneously, there will necessarily be a healthful mental excitement mingled with the physical training, particularly when the movements are regulated by the rhythm of music, which is usually the case in modern schools. The utility of such exercises, when properly and judiciously employed cannot be doubted, especially after the age of 12 or 14 years, before which they should rarely, if ever, be resorted to. Numerous ailments to which females are peculiarly liable are due to the neglect of proper physical training, and may be prevented or cured by a judicious employment of calisthenic exercises. Many injurious practices, such as tight lacing, are necessarily precluded by the regular resort to such exercises. Ling, the celebrated Swedish author of *kinesipathy* or the *movement-*

cure, has written very enthusiastically upon the importance of free gymnastic exercises, as a means of promoting health as well as of curing disease. (See *Die allgemeinen Gründe der Gymnastik*, published at Stockholm, in 1840.) He founded the Central Institute at Stockholm, subsequently conducted by Prof. Branting. Many excellent manuals giving full practical directions to teachers, are now published. In social life, dancing is one of the most attractive and beneficial of calisthenic exercises, and were it dissociated from the fashionable dissipation with which it is too often allied, would meet with universal favor. Some of the most eminent teachers of females have regarded this species of exercise as the best even for schools. Mrs. Willard says, "The grace of motion must be learned chiefly from instruction in dancing. Other advantages, besides that of a graceful carriage, might be derived from such instruction, if the lessons were judiciously timed. Exercise is needful to the health, and recreation to the cheerfulness and contentment of youth. Female youth should not be allowed to range unrestrained, to seek amusement for themselves. If it were entirely prohibited, they would be driven to seek it by stealth; which would lead them to many improprieties of conduct, and would have a pernicious effect upon their general character, by inducing a habit of treading forbidden paths. The alternative that remains is to provide them with proper recreation, which, after the confinement of the day, they might enjoy under the eye of their instructors. Dancing is exactly suited to this purpose, as also to that of exercise; for perhaps in no way can so much healthy exercise be taken in so short a time." Miss C. E. Beecher, in *Educational Reminiscences*, remarks, "When physical education takes the proper place in our schools, young girls will be trained in the classrooms to move heads, hands, and arms gracefully; to sit, to stand, and to walk properly, and to pursue calisthenic exercises for physical development as a regular school duty as much as their studies. And these exercises, set to music, will be sought as the most agreeable of school duties."

In all such exercises, certain general rules and directions are to be kept steadily in view. They should never be practiced immediately after meals, nor very near the time of eating, as digestion cannot be properly performed when the system is in an exhausted condition. The best time for exercise is early in the morning or towards evening. In school, these exercises, being of a moderate character, may come after the mind is wearied with protracted intellectual work, for then they will prove a relief; but intellectual efforts cannot effectively be put forth after the physical system has become jaded and fatigued by protracted exercise. Calisthenic exercises should always be commenced and finished gently; indeed, all abrupt transitions from gentle to violent exertions, or the contrary, should be avoided. It is by moderate and prolonged or repeated exercise that the physical organs are to be developed or improved, not by violent and fitful efforts. The weaker organs should receive the most attention, so that the whole system may receive a harmonious development. The dress should be light and easy; and the department in which the exercises are taken should be spacious, cool, and well-ventilated. All such exercises require to be practiced with many precautions, and with a due regard to the condition of the individual. Teachers may be the means of doing much injury by indiscriminately requiring all their pupils to go through the same amount of exercise. The effect upon every pupil should be carefully watched; and, in some cases, the advice of a careful physician should not be dispensed with.— See CATHARINE E. BEECHER, *Physiology and Calisthenics* (N.Y., 1856); and *Educational Reminiscences* (N.Y., 1874); KINGSLEY, *Health and Education* (Lond. and N. Y., 1874); WATSON, *Manual of Calisthenics* (N.Y., 1864); TRALL, *The Illustrated Family Gymnasium* (N.Y., 1857); DIO LEWIS, *New Gymnastics* (Boston, 1862); BARNET, *The Gymnasium at Home* (N.Y., 1871). (See GYMNASTICS, and PHYSICAL EDUCATION.)

CALISTHENIUM, a newly coined term, applied to an apartment or hall in which calisthenic exercises are practiced; formed after the analogy of *gymnasium*.

CALLIGRAPHY. See PENMANSHIP.

CAMBRIDGE, University of, one of the oldest and most famous institutions of learning in England. A school is said to have been founded at Cambridge, by a party of monks, as early as 1109; and, twenty years later, Alfred of Beverley, the historian, lodged in the town, and studied. The records of the university are preserved in the Tower, and show the university to have been in full operation in 1229. Edward I., in 1291, granted it the first formal charter of privileges, which was amplified by succeeding sovereigns. Edward II. obtained the first papal recognition of the university. Henry VI. founded King's College; and his consort founded Queens', which obtained a second patroness in the consort of Edward IV. Henry VIII. consolidated and enriched earlier foundations to form Trinity College; but, from 1257, the date of the founding of St. Peter's College, private munificence was, and still is, yet more active in endowing the various foundations. A new era began with Queen Elizabeth, in the 13th year of whose reign, on the basis of existing charters, the University of Cambridge was incorporated, under the title of "the Chancellor, Masters, and Scholars of the University of Cambridge." The university is a federal republic of 17 colleges (or, with Cavendish College, 18), maintained solely by the endowments of founders and benefactors. Each college is a lesser republic, with its own statutes, but is subject to university law. The present statutes were confirmed, in 1858, by Queen Victoria. The legislative and executive bodies are composed of members of the colleges. All masters of arts and doctors in divinity, law, and physic, whose names are on the university register, have the right to vote in the senate.

The electoral roll is a smaller body, consisting of all who have resided, during the preceding year, at the university, together with heads, officers, and examiners; and by it many of the university officers are elected. The senate, in 1876, numbered 5,816; the electoral roll, 318. Meetings of the senate (*congregations*) are held fortnightly during terms, for conferring degrees and transacting business. The council of the senate consists of the chancellor, and vice-chancellor, *ex officio*, and 16 other members of the senate on the electoral roll, chosen by the latter body. All resolutions for conferring degrees, etc. (*graces*), must be sanctioned by the council before they are submitted to the senate. The executive consists of the chancellor, who is the head of the university and non-resident (usually a prince or a nobleman); the vice-chancellor, always the head of a college, wielding the full powers of the chancellor, and, *pro tem.*, a magistrate for the university, the town, and the county; the high steward, the commissary, the *sex viri*, the assessor, all exercising judicial functions; the public orator, who is the mouth-piece of the senate; the librarian; the registrary, for the registration of graces and the custody of records; two proctors and two pro-proctors, who maintain discipline and attend congregations to read graces and register votes; the university marshals (constables); the esquire bedells; and the university counsel, solicitor, moderators, and syndics, the last being members of special committees for specific duties. The university sends two members to parliament, elected by the senate,—a privilege first granted by James I.—There are 33 professors: of divinity, four; of law, three; of physic, medicine, anatomy, comparative anatomy, Greek, Latin, Hebrew, Sanskrit, one each; of Arabic, mathematics, astronomy, two each; of natural experimental philosophy, experimental physics, botany, geology, mineralogy, chemistry, moral theology or casuistry, modern history, political economy, music, archæology, fine arts, one each. The oldest, the Margaret professorship of divinity, dates from 1502. There are five *regius* professorships: divinity, civil law, physic, Greek, and Hebrew. Erasmus was the first professor of Greek, and the third Margaret professor. The stipends are from endowments, the university chest, and fees. A few are richly endowed. There are three terms: (1) Michaelmas, or October term (Oct. 1. to Dec. 16); (2) Lent, or January term (Jan. 13. to Friday before Palm-Sunday); (3) Easter, or Midsummer term (Friday after Easter to Friday after Commencement day, which is the last Tuesday but one in June). An under-graduate must reside in the university two-thirds of each term, *i. e.*, about six months during the year.—Members of colleges are classed as follows: (1) Heads of colleges, styled Master (at King's, Provost; at Queens', President); (2) Fellows of colleges, elected by the Society from distinguished graduates—in one or two colleges, after examination —numbering in all about 400; (3) Noblemen graduates, doctors in the several faculties, bachelors in divinity, masters of arts, and of law; (4) Bachelors of Arts, Law, and Physic; (5) Fellow commoners, usually younger sons of the nobility, or young men of fortune; (6) Scholars, generally elected by competition, and placed on the foundation; (7) Pensioners (*i. e.*, boarders), who form the great body of the students; and (8) Sizars, who are students of limited means, and enjoy certain emoluments and immunities. —Degrees are conferred in arts, law, medicine, divinity, and music. The first degree is that of Bachelor (B. A.), for which there are three requisites: (1) a period of residence, (2) to be a member of a college, or a non-collegiate student, and (3) to pass examinations. The honor examinations (*triposes*), nine in number, are held only once a year. Those who pass in these are arranged in three classes according to merit, and, in the mathematical *triposes*, are styled, respectively, *wranglers*, *senior optimes*, and *junior optimes*, the *senior wrangler* heading the list. The subjects of this *tripos* (35 are named in the schedule) embrace the whole range of pure mathematics, and mathematics applied to natural philosophy. The examination lasts nine days; and the publication of the list in the senate house, is the great excitement of the year. This *tripos* is the most ancient (the printed lists in the Calendar begin with 1747—8), and has given Cambridge its peculiar renown. The classical *tripos* ranks next in fame, age (first held in 1824), and numbers. It lasts eight days. The moral sciences *tripos*, lasting 6 days, embraces moral, political, and mental philosophy, logic, and political economy. The natural sciences *tripos* includes (1) chemistry, and other branches of physics, (2) botany, (3) geology and palæontology, (4) mineralogy, and (5) comparative anatomy, physiology, and zoölogy. Besides these, there are the *triposes* of law, of history, and of theology. A pass in any of these *triposes* entitles to B. A., the holder of which may become M. A. after three years. The university, in 1858, instituted *local examinations*, conducted at various places. (See EXAMINATIONS.) — The university is a body which holds public examinations, and confers degrees; the professors lecture, but hardly can be said to teach; the colleges train, lodge, and board the under-graduates. The most effective teaching is done by private tutors (*coaches*). The names of the colleges, with the date of the foundation of each, are as follows: St. Peters, 1257; Clare, 1326; Pembroke, 1347; Gonville and Caius, 1348; Trinity Hall, 1350; Corpus Christi, 1352; King's, 1441; Queens', 1448; St. Catharine's, 1473; Jesus, 1496; Christ's, 1505; St. John's, 1511; Magdalene, 1519; Trinity, 1546; Emmanuel, 1584; Sidney Sussex, 1598; Downing, 1800; Cavendish, 1876. The whole number of under-graduates, in 1876, was 2,175, the largest number (533) being in Trinity, and the next (359) in St. John's. There were also 74 non-collegiate students. Cavendish College aims to give a less expensive education to students, and at an earlier age than the others. — The university buildings are numerous: the senate house, adjoining which is the library, rich in 4,000 manuscripts and containing half a million of volumes; the geological museum; the observatory, in charge of Professor Adams; Addenbrooke's hospital, the Pitt Press, the botanic garden, the Fitzwilliam Museum, etc. There are various societies in the university for promoting research: the Antiquarian, Philological, and Philosophical societies. The Union combines a reading-room, library, and debating club. It has a handsome and spacious building.—See Fuller, *History of Cambridge from* 1066 *to* 1634; Carter, *History of Cambridge* (London, 1753); Dyer, *History of Cambridge;* Cooper, *Annals of Cambridge* (Cambridge, 1842—53); *Cambridge University Commission Report* (1852—3); *Cambridge University Calendar* (annual); *Students' Guide to the University of Cambridge* (1874); Bristed, *Three Years in an English University*, 3d edit. (N. Y., 1873); Everett, *On the Cam* (London, 1866).

CAMPE, Joachim Heinrich, a prominent educational writer of Germany, was born in 1746, and died in 1818. Having studied theology at the university of Halle, he occupied for several years a position as minister. In 1777, he accepted from Prince Francis of Dessau the appointment of councilor of education (*Educationsrath*) to the *Philanthropin*, and became its president in place of Basedow, who had resigned in 1776. The institution made marked and rapid progress under his direction; but his personal relations to Basedow were so unpleasant, that he resigned after a few months. He then founded an educational institution, similar to the *Philanthropin*, at Trittow, near Hamburg, where he remained, until 1787, when Duke Charles of Brunswick called him to his capital, in order to reform, conjointly with some other prominent educators, the school system of the duchy. The reformatory scheme of the duke could not, however, be carried out, in consequence of the opposition of the consistory and the diet. Campe was the most prominent representative of the principles on which the *Philanthropin* was founded. He avoided the eccentricities of Basedow, and thus gained for the principles which they both represented, a much larger number of friends. He gave so great a prominence to utilitarian considerations that he declared he valued more highly the merits of the man who introduced the use of the potato, or invented the spinning-wheel, than those of the author of the *Iliad*. The educational ideas of Campe were set forth in two periodicals, the *Braunschweigisches Journal* (4 vols., 1788—91), and *Allgemeine Revision des gesammten Schul- und Erziehungswesens* (16 vols., 1785—91). In the ninth volume of the latter was published a translation of Locke's *Thoughts on Education;* and in volumes xii. to xv., Rousseau's *Émile*, both with copious notes. The works of Campe are very numerous, including many popular juvenile books.

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CAPITAL UNIVERSITY, at Columbus, Ohio, was organized in 1850 by the Evangelical Lutheran synod of Ohio and the adjacent states, which, in 1876, formed a part of the Synodical Conference. It includes a preparatory or grammar school, and collegiate and theological departments. It has a library of 2,500 volumes, a faculty of 6 professors, 2 of whom teach both in the collegiate and the theological department, and 64 students, including those of theology. Much attention is given to the study of German, which extends through all the classes of the three departments, and is partly used as a means of instruction. The annual tuition fee in the grammar school is $25; in the college, $40. In the theological department, which, with a few brief intermissions, has been in successful operation since 1830, no charge is made for tuition; and indigent young men, possessing the necessary qualifications for the ministry, are supported by the Synodical Education Society. The Rev. Dr. Wm. F. Lehmann is (1876) the president of the institution.

CARLETON COLLEGE, at Northfield, Minn., was organized in 1866, by the Congregationalists. It has a preparatory, a collegiate, and an English department, the latter embracing those pupils whose time or means will not allow them to secure a thorough classical education. The college department was not organized until Sept., 1870. Both sexes are instructed in the same classes, and may take the same degrees. There were, in 1875, 216 students, of whom 13 belonged to the collegiate, 82 to the preparatory, and 111 to the English department. The corps of instructors numbered 10. The first board of trustees was elected by the state conference of Evangelical churches, which now annually appoints a visiting committee. The board of trustees is self-perpetuating, but a majority of its members, according to the provisions of the organic act. must be Congregationalists. In 1871, the college received $50,000 in cash from Wm. Carleton, of Charlestown, Mass., and the board of trustees voted to give his name to the institution, and to hold his gift as an endowment. In 1875, the endowment fund had increased to about $80,000. The library, in 1875, numbered 2,000 volumes. The Wm. H. Dunning Cabinet, donated to the college in 1875, is a valuable collection of geological specimens. A museum of natural history has been commenced. The college has three buildings and a beautiful site of about twenty-five acres. The tuition fee in the collegiate department is $8 per term of 13 weeks. The president of the institution is (1876) Rev. James Woodward Strong, D. D.

CARTHAGE COLLEGE, at Carthage, Ill., was founded in 1870, by the Evangelical Lutheran Church (General Synod). It commenced as a classical school, and the college department was not organized until 1873. It comprises two departments, the collegiate and the academic, the former embracing three different courses of study, the classical, the scientific, and the philosophical. The institution had, in 1875, 9 instructors and 203 students, of whom 53 were females. It is supported partly from endowments, and partly by tuition fees. The endowments, amounted, in 1875, to about $40,000. The annual tuition fee is from $24 to $28. The college library numbered about 3,000 volumes, and the two literary societies of the college, the Galileo and the Cicero, have also each commenced the formation of a library. L. F. M. Easterday was the principal of the institution while it was a classical school (1870 to 1873); and the Rev. D. L. Tressler was subsequently elected president of the college.

CATECHETICAL METHOD, the method of instruction by question and answer, according to which the pupils are required to answer the questions of the teacher, so as to show what explanations they particularly need in order to obtain a correct knowledge of the subject; or sometimes they commit to memory and recite answers to set questions from a text-book. This was the method employed in teaching the truths of Christianity in the early churches, each response to the question being the formal statement or definition of a dogmatic truth; and when the object is to impart definite information in brief and precise language which the pupil is expected to commit to memory and recite *verbatim*, this method is of great value. There are but few subjects, however, which can be properly taught in this way; since, in training the intellectual faculties, the sequence of facts, thoughts, or ideas, is more important than their clear apprehension or expression singly and disconnectedly. On this principle, there are several objections to the catechetical method as one of general application: (1) The pupil is deprived of a proper exercise of the expressive faculties, being required only to repeat what has been enunciated in the language of others; (2) The logical relations of the facts learned are apt to be unnoticed by the pupils, from the absence of those intermediate connective words and phrases by which ordinarily those relations are indicated; (3) The pupil, by learning merely the answer to a question, fails to obtain a full idea of the truth, a part of which, and sometimes the most essential part, is expressed in the question itself. Thus, if a pupil is asked, *What is an island?* and he answers, *Land surrounded by water*, he does not entirely express the fact, but only a disjointed fragment of it. Many text-books constructed on the catechetical plan are liable to this objection; others, however, obviate it by invariably making the answer a complete statement, the gist of the question being repeated. Thus, the answer to the question, *What is an island?* would be, *An island is land surrounded by water*. When the catechetical method is employed in giving oral instruction, the teacher should be careful to keep this principle in view. A skillful use of this method will always be found effective in opening up to the mind of the pupil the fundamental ideas and principles of a subject previous to its formal study by the pupil himself, or, when difficulties arise, in leading the pupil's mind, by an adroit series of interrogatories, to such an analysis of the statement or problem in question as will enable him to apprehend the elementary facts or principles involved, and thus to solve the difficulty without further aid. This, however, is not so much an application of the catechetical method as a skillful use of interrogation, one of the most valuable and indispensable means of imparting information. (See Interrogation.) The Socratic method was an illustration of this, being employed to bring conviction to the learner's mind by obtaining, in answer to the questions asked, a series of admissions leading finally to his assent to the truth proposed.

The catechetical method was formerly very popular in schools, and almost universally employed; but, in proportion as mechanical methods of recitation and rote-teaching gave place to such as appealed directly to the pupil's intelligence and powers of expression, the mere question-and-answer system of instruction became discredited and was abandoned. In its place, the *topical method* is now in quite general use. This requires that the pupil shall give a connected statement, not simply as an answer to a question, but as logically expressing the knowledge which he has acquired in regard to the topic assigned by the teacher.

CATECHETICAL SCHOOL. See Alexandrian School.

CATECHISM (Gr. *κατηχισμός*, instruction), an elementary work containing a summary of principles, especially of religious doctrine, reduced to the form of questions and answers. The name catechism for religious works of this kind was probably first proposed by Luther, whose two famous catechisms appeared in 1529. Summaries of Christian doctrines, in the form of questions and answers, under other names, are, however, of much earlier origin, and can be rich in 4,000 manuscripts and containing half a million of volumes; the geological museum; the observatory, in charge of Professor Adams; Addenbrooke's hospital, the Pitt Press, the botanic garden, the Fitzwilliam Museum, etc. There are various societies in the university for promoting research: the Antiquarian, Philological, and Philosophical societies. The Union combines a reading-room, library, and debating club. It has a handsome and spacious building.—See Fuller, *History of Cambridge from* 1066 *to* 1634; Carter, *History of Cambridge* (London, 1753); Dyer, *History of Cambridge;* Cooper, *Annals of Cambridge* (Cambridge, 1842—53); *Cambridge University Commission Report* (1852—3); *Cambridge University Calendar* (annual); *Students' Guide to the University of Cambridge* (1874); Bristed, *Three Years in an English University*, 3d edit. (N. Y., 1873); Everett, *On the Cam* (London, 1866).

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CANE HILL COLLEGE, at Cane Hill, near Boonsboro, Washington county, Arkansas, was chartered in 1852, and reorganized in 1868. It is under the control of the Cumberland Presbyterian Church. The institution has preparatory and collegiate departments. In 1873—4 there were 3 instructors, and 68 preparatory and 18 collegiate students. The Rev. F. R. Earle, A. M., is (1876) the president.

CAPITAL UNIVERSITY, at Columbus, Ohio, was organized in 1850 by the Evangelical Lutheran synod of Ohio and the adjacent states, which, in 1876, formed a part of the Synodical Conference. It includes a preparatory or grammar school, and collegiate and theological departments. It has a library of 2,500 volumes, a faculty of 6 professors, 2 of whom teach both in the collegiate and the theological department, and 64 students, including those of theology. Much attention is given to the study of German, which extends through all the classes of the three departments, and is partly used as a means of instruction. The annual tuition fee in the grammar school is $25; in the college, $40. In the theological department, which, with a few brief intermissions, has been in successful operation since 1830, no charge is made for tuition; and indigent young men, possessing the necessary qualifications for the ministry, are supported by the Synodical Education Society. The Rev. Dr. Wm. F. Lehmann is (1876) the president of the institution.

CARLETON COLLEGE, at Northfield, Minn., was organized in 1866, by the Congregationalists. It has a preparatory, a collegiate, and an English department, the latter embracing those pupils whose time or means will not allow them to secure a thorough classical education. The college department was not organized until Sept., 1870. Both sexes are instructed in the same classes, and may take the same degrees. There were, in 1875, 216 students, of whom 13 belonged to the collegiate, 82 to the preparatory, and 111 to the English department. The corps of instructors numbered 10. The first board of trustees was elected by the state conference of Evangelical churches, which now annually appoints a visiting committee. The board of trustees is self-perpetuating, but a majority of its members, according to the provisions of the organic act, must be Congregationalists. In 1871, the college received $50,000 in cash from Wm. Carleton, of Charlestown, Mass., and the board of trustees voted to give his name to the institution, and to hold his gift as an endowment. In 1875, the endowment fund had increased to about $80,000. The library, in 1875, numbered 2,000 volumes. The Wm. H. Dunning Cabinet, donated to the college in 1875, is a valuable collection of geological specimens. A museum of natural history has been commenced. The college has three buildings and a beautiful site of about twenty-five acres. The tuition fee in the collegiate department is $8 per term of 13 weeks. The president of the institution is (1876) Rev. James Woodward Strong, D. D.

CARTHAGE COLLEGE, at Carthage, Ill., was founded in 1870, by the Evangelical Lutheran Church (General Synod). It commenced as a classical school, and the college department was not organized until 1873. It comprises two departments, the collegiate and the academic, the former embracing three different courses of study, the classical, the scientific, and the philosophical. The institution had, in 1875, 9 instructors and 203 students, of whom 53 were females. It is supported partly from endowments, and partly by tuition fees. The endowments, amounted, in 1875, to about $40,000. The annual tuition fee is from $24 to $28. The college library numbered about 3,000 volumes, and the two literary societies of the college, the Galileo and the Cicero, have also each commenced the formation of a library. L. F. M. Easterday was the principal of the institution while it was a classical school (1870 to 1873); and the Rev. D. L. Tressler was subsequently elected president of the college.

CATECHETICAL METHOD, the method of instruction by question and answer, according to which the pupils are required to answer the questions of the teacher, so as to show what explanations they particularly need in order to obtain a correct knowledge of the subject; or sometimes they commit to memory and recite answers to set questions from a text-book. This was the method employed in teaching the truths of Christianity in the early churches, each response to the question being the formal statement or definition of a dogmatic truth; and when the object is to impart definite information in brief and precise language which the pupil is expected to commit to memory and recite *verbatim*, this method is of great value. There are but few subjects, however, which can be properly taught in this way; since, in training the intellectual faculties, the sequence of facts, thoughts, or ideas, is more important than their clear apprehension or expression singly and disconnectedly. On this principle, there are several objections to the catechetical method as one of general application: (1) The pupil is deprived of a proper exercise of the expressive faculties, being required only to repeat what has been enunciated in the language of others; (2) The logical relations of the facts learned are apt to be unnoticed by the pupils, from the absence of those intermediate connective words and phrases by which ordinarily those relations are indicated; (3) The pupil, by learning merely the answer to a question, fails to obtain a full idea of the truth, a part of which, and sometimes the most essential part, is expressed in the question itself. Thus, if a pupil is asked, *What is an island?* and he answers, *Land surrounded by water*, he does not entirely express the fact, but only a disjointed fragment of it. Many text-books constructed on the catechetical plan are liable to this objection; others, however, obviate it by invariably making the answer a complete statement, the gist of the question being repeated. Thus, the answer to the question, *What is an island?* would be, *An island is land surrounded by water*. When the catechetical method is employed in giving oral instruction, the teacher should be careful to keep this principle in view. A skillful use of this method will always be found effective in opening up to the mind of the pupil the fundamental ideas and principles of a subject previous to its formal study by the pupil himself, or, when difficulties arise, in leading the pupil's mind, by an adroit series of interrogatories, to such an analysis of the statement or problem in question as will enable him to apprehend the elementary facts or principles involved, and thus to solve the difficulty without further aid. This, however, is not so much an application of the catechetical method as a skillful use of interrogation, one of the most valuable and indispensable means of imparting information. (See INTERROGATION.) The Socratic method was an illustration of this, being employed to bring conviction to the learner's mind by obtaining, in answer to the questions asked, a series of admissions leading finally to his assent to the truth proposed.

The catechetical method was formerly very popular in schools, and almost universally employed; but, in proportion as mechanical methods of recitation and rote-teaching gave place to such as appealed directly to the pupil's intelligence and powers of expression, the mere question-and-answer system of instruction became discredited and was abandoned. In its place, the *topical method* is now in quite general use. This requires that the pupil shall give a connected statement, not simply as an answer to a question, but as logically expressing the knowledge which he has acquired in regard to the topic assigned by the teacher.

CATECHETICAL SCHOOL. See ALEXANDRIAN SCHOOL.

CATECHISM (Gr. κατηχισμός, instruction), an elementary work containing a summary of principles, especially of religious doctrine, reduced to the form of questions and answers. The name catechism for religious works of this kind was probably first proposed by Luther, whose two famous catechisms appeared in 1529. Summaries of Christian doctrines, in the form of questions and answers, under other names, are, however, of much earlier origin, and can be traced to the eighth century. Among the early works of this class, those by Kero, a monk of St. Gall, and one probably written by Otfried of Weissenburg, were the most famous. Subsequently, we find similar books in use among the Waldenses and Bohemian Brethren. These works contained mostly the Apostles' Creed, the Lord's Prayer, and, since the fourteenth century, the Ten Commandments. Luther, who devoted special attention to the religious instruction of children, published his first elementary work on this subject in 1520. A few years later, Justus Jonas and Johann Agricola were commissioned to prepare a catechism embracing the entire creed of the Reformation, but subsequently Luther undertook the work himself. Both of his catechisms were received by the Lutheran Church among the symbolical books. The most celebrated among the catechisms which originated in the Reformed Church were the Geneva catechisms, compiled in the French language by Calvin (the smaller in 1536, the larger in 1541), the Zürich catechism, which, in 1639, was received as a symbolical book, and especially the Heidelberg catechism. compiled in 1563 by order of the elector of the Palatinate, and generally adopted by the German and Dutch Reformed Churches. In the Anglican Church, the Church Catechism, which, in 1552, was compiled by John Poynet, sanctioned by Edward VI., and published in 1553, obtained a great authority. The Presbyterian Church has generally adopted the shorter Assembly Catechism, which was compiled by committees of the Westminster Assembly, presented to the House of Commons in 1647 and 1648, and in the latter year by resolution of Sept. 15., 1648, ordered to be printed "by authority," for public use. This catechism is also extensively used among the Independents and Congregationalists in Great Britain and America. In the Wesleyan Church of England, the cathechisms in use have been arranged by the Rev. Richard Watson. For the Methodist Episcopal Church of the United States, a series of three catechisms, prepared by Rev. Dr. Kidder, was adopted by the General Conference of 1852. In the Roman Catholic Church, the Tridentine Council ordered the compilation of a catechism "for the use of pastors." It was published in Rome, in 1566, under the title of *Catechismus Romanus*. It was, originally, not in the shape of questions and answers, though it has this form in later editions. Among the numerous catechisms prepared for the use of children, those by Canisius (1554 and 1566), Bellarmin (1603), and Bossuet (1687) have had the largest circulation. The Vatican Council, in 1870, decreed the preparation of a common catechism for the whole Church, which is to be essentially that of Bellarmin. In the Greek Church, the catechism prepared by Mogilas, metropolitan of Kief (1642), was recognized as a standard, in 1672, by a synod at Jerusalem. Many other religious denominations, besides those mentioned, have also their denominational catechisms; and it may, therefore, be said that the immense majority of the children of Christian parents receive their first instruction in the tenets of Christianity by means of catechisms. The object of a catechism is, more or less, not only to present to children, in the most lucid form, the tenets of the religious communion of which they are expected to become active members in after life, but to impress these doctrines indelibly upon their minds.

CATECHUMEN (Gr. *κατηχούμενος*, instructed by word of mouth), the name given, in the early Christian church, to a convert who was receiving catechetical instruction preparatory to baptism. The catechumens were divided into different grades or classes according to the degree of their proficiency, only those of the highest grade, who had been pronounced fit for baptism, being permitted to be present at the administration of the Lord's Supper. This appellation was afterwards given to the younger members of any Christian church who were undergoing instruction to prepare them for the rite of confirmation, or for the Communion, in which sense the term is still used. (See CATECHISM.)

CATHEDRAL AND COLLEGIATE SCHOOLS (Ger. *Dom- und Stiftsschulen*), a kind of schools founded in the middle ages in connection with cathedral and collegiate churches. They are of considerable importance in the history of education, because they shared with the convent schools the honor of being, for a long time, almost exclusively the nurseries of instruction and education in Christian countries. They were originally intended chiefly for educating the candidates for the priesthood, but afforded also to others who regarded a good education necessary for their social position, an opportunity to acquire the knowledge needed. A few schools in connection with cathedral churches appear to have existed even before the foundation of the Benedictine order; and the towns of Arles, Reims, and Orleans are, in particular, mentioned as having possessed schools of this kind. In England, the episcopal school at York enjoyed a high reputation. The systematic organization of these institutions as a special class of schools, in distinction from the convent schools, was due to Bishop Chrodegang of Metz (died 766). He united the clergymen of his cathedral church for a common life on the basis of a modified rule of the Benedictine order, and thus became the founder of a class of religious orders known in church history as the Canons Regular. These orders, subsequently divided into a large number of different branches, regarded it as one of their foremost duties to establish schools similar in organization to those of the Benedictines. In the management of these schools, greater attention was paid to strict discipline than to excellence of instruction. One brother (*frater*), of unblamable character, was charged, in each establishment of these orders, with the duty of superintending the scholars, and of enforcing strict discipline, in order that they might become able "to rise to the dignities of the church, fitted out with ecclesiastical erudition and spiritual weapons." The number of these schools rapidly increased, and they made the towns which contained them the centers of learning. The subjects of instruction embraced, besides theology, the reading of Latin and Greek classics, as Homer, Virgil, Sallust, Statius, Terence, Cicero, and Seneca, the making of Latin and Greek verses, instruction in painting, calligraphy, church singing, and arithmetic. In the celebrated cathedral school of Paderborn, instruction was given in mathematics, physics, music, rhetoric, and dialectics. Special interest in the success of these schools was taken by Charlemagne (see CHARLEMAGNE), who, in very emphatic rescripts, urged all the bishops to establish schools of this kind. During the reign of his son, Louis le Débonnaire, the synod of Aix-la-Chapelle, in 816, made the adoption of the rule of Chrodegang, involving the establishment of a school, compulsory for all cathedral (episcopal) churches. Many other synods urged the carrying out of this law, and demanded the establishment of schools, not for the episcopal churches alone, but likewise for other large churches. The rapid spread of the Canons Regular, who no longer confined their religious communities to the capital of the diocese, but established numerous "collegiate" churches in smaller towns, greatly aided in the steady increase of schools. The collegiate schools of the smaller towns resembled the town schools which arose during and after the crusades. They provided only for the teaching of the *trivium;* while, in the episcopal city, the *quadrivium* as well as the *trivium* was taught, and the addition of the *sacra pagina* developed the episcopal seminaries. With the decline of the Canons Regular, this class of schools also lost their reputation. The lower studies began to be pursued at the parish schools; and for the higher branches the universities made much more ample provision than had ever been made by the cathedral and collegiate schools. — See LAUNOII *De scholis celebrioribus s. a Carolo M. s. post eundem in Occidente instauratis* (Paris, 1672); OZANAM, *La Civilisation Chrétienne chez les Francs* (Paris, 1849).

CECILIAN COLLEGE, situated near Elizabethtown, Hardin county, Kentucky, was founded by Charles Cecil and sons, in 1860. Though a private institution, it was chartered in 1867, and confers degrees. It is under Roman Catholic influence. It comprises a commercial and a classical course.

CENSUS, School. See SCHOOL CENSUS.

CENTENARY COLLEGE, at Jackson, Louisiana, was established by the state in 1825, and taken under the patronage of the Methodist Episcopal Church, South, in 1845. It comprises a preparatory and a collegiate department, the latter having a classical and a scientific course. The buildings are healthfully situated in a grove of pine, magnolia, oak, and beech. They consist of a commodious steward's hall, two brick dormitories, each containing twenty-four rooms, and a magnificent center building, which has been erected at an expense of over $60,000. It contains a chapel for public exhibitions, large enough to seat over two thousand persons. The college possesses a valuable set of philosophical, astronomical, and chemical apparatus, and also a well-selected mineralogical and geographical cabinet. The value of the college property, in 1876, was about $100,000, and the income from productive funds $10,000. The college library contains about 2,000 volumes; those of the two literary societies, about 1,600 each. The cost of tuition is $60 a year in the collegiate, and $40 in the preparatory department. Rooms in the dormitories are free of rent. In 1872—73 there were 5 instructors, 100 preparatory and 24 collegiate students, and 203 alumni. The Rev. C. G. Andrews, A. M., is (1876) the president.

CENTRAL AMERICA is a narrow and irregular strip of land which forms the southern part of North America. It comprises the five republics, Guatemala, Honduras, San Salvador, Nicaragua, and Costa Rica. Its total area is 175,000 sq. m., and its population, according to the census of 1865, 2,665,000. Of these 134,000 are whites; 1,000,000 are mestizos, or the offspring of whites and Indians; 1,500,000 are aboriginal Indians; and the remainder are negroes, either pure or mixed. The country was conquered by the Spaniards in 1525, and remained subject to Spanish rule until 1823, when the five colonies formed themselves into a federal republic, which lasted until 1839, when the federation was dissolved. There have been repeated federations formed since, but the inhabitants, like the country, are very unstable, and a speedy dissolution has in each case followed. For a long time, each of the republics has been going its own way in politics and also in education —a way which thus far has led only to anarchy. The great instrument of reform, in all these Spanish American republics, seems to have been to plunder the Church — a plan which thus far has borne no valuable fruit for public education.

In *Guatemala* public instruction is still in the hands of the clergy, who, on account both of these repeated plunderings and of the severe laws against them, are incapable of doing much. There are 26 primary schools in the capital (10 for boys and 16 for girls) and several private institutions. These are supported mainly by voluntary offerings. For the higher education, there is a college in old Guatemala, which formerly had a fair reputation. New Guatemala has the *colegio de la Trinidad*, the *colegio Tridentino*, and a university besides. The latter is the most famous of the Central American schools and has many students from the other republics. The *Sociedad patriótico-económica*, founded in 1795, also supports a school for drawing, sculpture, and mathematics, and publishes a journal.

Honduras possesses two institutions called universities, but they are such only in name. The public schools are scarcely worth mentioning, and education is at the lowest possible point. In 1874, the number of public schools was 197, which were attended, on an average, by 25 pupils each, showing about one pupil for 60 inhabitants.

San Salvador also possesses a university which has the reputation of being the second in Central America. Primary schools are few in number; reading and reckoning are taught in them more or less indifferently; writing is a luxury in all these republics which everybody cannot afford.

Nicaragua has a more demoralized population even than the other republics, owing to the former filibustering expeditions from abroad, and also to the many political revolutions and partisan dissensions which have occurred. There are two universities in name, one in Leon and one in Granada. The first possesses a small library of 1500 volumes; the other has none. In 1873, the whole number of schools for males was 92, with an attendance of 3,871; and for females, 9, with an attendance of 532. The whole number of children of school age (7 to 15) was 30,000—males, 12,000, and females, 18,000.

In *Costa Rica*, the schools are somewhat better attended, but both the amount and the manner of instruction given are pitiable. A very short time suffices to forget what little has been learned. Moritz Wagner gives a rather gloomy picture of these schools. He leads us into dark, damp rooms, in which teachers of unexampled ignorance give instruction in reading, writing, and reckoning to some dozen of barefooted children, who are crowded closely together and full of impatience to escape. There is a university as well as a lyceum in San José, and another lyceum in Cartago. The university has six chairs, and the professors receive a salary of $400 a year. Jurisprudence and theology are the chief studies. Mathematics and a little Latin are taught, but no Greek. There are about 100 students. The lyceums are no better. See Le Roy in *Schmid, Pädagogische Encyclopädie*, vol. x., art. *Südamerica*; Squier, *The States of Central America* (N. Y., 1857).

CENTRAL COLLEGE, at Fayette, Missouri, under the control of the Methodist Episcopal Church, South, of that state, was chartered in 1855. It comprises a preparatory and a collegiate department. The latter embraces five schools; namely, pure and applied mathematics, moral philosophy, English language and literature, ancient languages and literature, and physical science. Each student is required to attend at least three schools. The degrees conferred by Central College are (1) Graduate in a School, (2) Bachelor of Philosophy, (3) Bachelor of Arts, (4) Master of Arts. The degree of graduate in a school is given upon passing an examination on the subjects taught in that school. The degree of bachelor of philosophy is conferred upon graduates in the schools of English literature, moral philosophy, and physical science who pass satisfactory examinations in the studies of the junior and intermediate classes of mathematics. To obtain the degree of bachelor of arts, the student must graduate in the schools of moral philosophy, physical science, and ancient languages, except the Greek and Roman literature, and pass examinations in the studies of the junior class in the school of English literature, and in part of the studies of the school of mathematics. To obtain the degree of master of arts, the student must graduate in the schools of English, Latin, Greek, moral philosophy, natural philosophy, and chemistry; also in two modern languages, and pass an approved examination in all the studies of the school of mathematics. The college property is valued at $40,000, and the productive funds amount to $60,000. In 1873—4 there were 7 instructors, and 33 preparatory, and 111 collegiate students. The Rev. J. C. Wills, D. D., is (1876) the president.

CENTRAL TENNESSEE COLLEGE, at Nashville, Tenn., was organized in 1866. It is under the patronage of the Methodist Episcopal Church, and is supported almost entirely by the Freedmen's Aid Society of that church. Through the Methodist Missionary Society and the Freedmen's Bureau, the buildings now occupied, valued at $45,000, were secured in 1869. The college is designed mainly for the education of colored youth of both sexes. It embraces an academic department, for English education; a normal department, for training teachers; a preparatory school, a classical collegiate course, and a theological department. In 1873—4, there were 14 instructors, 262 students in the preparatory and lower departments (139 males and 123 females), and 21 in the theological department. The Rev. J. Braden, D. D., is (1876) the president.

CENTRAL UNIVERSITY, at Richmond, Kentucky, was chartered in 1873, and is under the control of the Southern Presbyterians. It has property valued at $70,000, and productive funds to the amount of $150,000. It was opened in 1874 with 75 preparatory students, of whom 40 were preparing for the classical, and 35 for the scientific course. The Rev. R. L. Breck, D. D., is (1876) the chancellor.

CENTRE COLLEGE, at Danville, Kentucky, was first chartered in 1819, and received an amended charter in 1824. It was originally a state institution, but was purchased by the Presbyterian synod of Kentucky, which obtained complete control in 1830. Upon the division of the synod in 1866, the college was held by that part adhering to the General Assembly (North). It is supported by tuition fees and the income of the endowment, which amounts to $180,000. The other property is valued at $75,000. Tuition in the college is $50 a year; but to the sons of clergymen and other young men of limited means and good character, it is free. The institution comprises a preparatory and a collegiate department. Special attention is given to the German language. In 1875—6, there were 8 instructors, 125 collegiate and 50 preparatory students, and about 7,500 volumes in the libraries. The number of *alumni* in 1872 was 754. The successive presidents have been as follows: the Rev. James McChord, 1820, who died before entering upon the duties of his office; the Rev. Samuel Finley, *pro tem.*, 1822; the Rev. Jeremiah Chamberlain, D.D., from 1822 to 1826; the Rev. D. C. Proctor, D. D., *pro tem.*, 1826;

the Rev. Gideon Blackburn, D. D., from 1827 to 1830; the Rev. John C. Young, D.D., from 1830 to 1857; the Rev. Lewis W. Green, D. D., from 1857 to 1863; the Rev. W. L. Breckinridge, from 1863 fo 1868; and Ormond Beatty, LL.D., appointed in 1872 and still (1876) in office.

CERTIFICATE. See LICENSE, and INCENTIVES, SCHOOL.

CHAPSAL, Charles Pierre, a French grammarian, was born in Paris in 1787, and died in 1858. He is chiefly noted for the grammar of which he was the joint author with Francis Joseph Noël. This work, entitled *Nouvelle grammaire française, avec exercises,* was very popular, passing through as many as 40 editions between 1823 and 1858, and is still in use, although to a great extent superseded by more recent publications. Chapsal realized from this book a large fortune, which he partly expended upon charitable objects. At his death, he left 80,000 francs to the teachers in the outskirts of Paris.

CHARACTER, Discernment of. The perception of the peculiarities of individual character by its external manifestations constitutes an essential preliminary to all sound and judicious educational treatment. There is an endless diversity in the natural inclinations and capacities of children; and, therefore, no system of education can claim to be scientific that fails to recognize this fact, and to supply (1) the principles and rules that should guide the educator in discerning these individual peculiarities, and (2) the practical methods of treatment best adapted to each. Generally, however, education is carried on with but little or no such discriminations; pupils, whatever may be their temperament, physical condition, state of health, mental capacities, or moral proclivities, are treated according to the same system or plan. It is true, there is in every mind a kind of instinctive perception of the peculiarities of character, either the result of an inexplicable impression or prejudice, formed with little observation, or a positive judgment derived almost unconsciously from an attention, more or less superficial, to the person's appearance, actions, and words on different occasions. A systematic study of the external indications of character has not, however, been generally, or usually, enjoined upon the teacher as a preparation for the work of training and instruction. Nevertheless, the most distinguished educators have fully recognized the principle. "Let him that is skilled in teaching," says Quintilian, "ascertain first of all when a boy is entrusted to him, his ability and disposition.... When a tutor has observed these indications of disposition and ability, let him next consider how the mind of his pupil is to be managed. Some boys are indolent, unless you stimulate them; some are indignant at being commanded; fear restrains some, and unnerves others; continued labor forms some; but with others hasty efforts succeed better. Let the boy be given to me, whom praise stimulates, whom honor delights, who weeps when he is unsuccessful. His powers must be cultivated under the influence of ambition; reproach will sting him to the quick; honor will incite him; and in such a boy I shall never be apprehensive of indifference." Here we have prescribed, in moral education at least, an adaptation of treatment to special traits; and few will deny that education is perfect in its plan and efficient in its results in proportion as its agencies and operations are adapted to the peculiarities of the individual character which it is to form or unfold. When children are educated at home by private teachers, and, indeed, always in that part of education which belongs to the family or home circle, there is a wide scope for such discrimination; but when large masses of children are taught together, as in public schools, a discrimination of individual traits, and a corresponding adaptation of method and requirement becomes, except within quite narrow limits, impracticable; still, it has been questioned whether, in the organization of such schools, the classification of the children should not be based upon other considerations than merely their apparent proficiency in a few elementary branches of study. If to secure these intellectual acquirements be the exclusive end of the teaching to be given, the usual classification is, of course, proper; but, even then, it should be constantly corrected according as individual capacity unfolds itself. Some pupils will make much more rapid progress than others; and if these are kept back in order that the general or average progress of the class may be brought up to a given standard, their future progress will be greatly obstructed; their mental activity and elasticity will be impaired by the want of due exercise; and their interest in study will be more or less extinguished. Moreover, not finding the natural craving of their minds for exercise gratified, their sensuous nature will be unduly developed, and they will be inclined to plunge into frivolous and idle amusements. In large schools, conducted almost entirely without any of the discrimination here referred to, the individual is sacrificed to the mass; and many a bright youth loses not only the best hours of his life, but, by untoward habits and a want of due training, the very spring of his intellectual nature. The moral influence of such indiscriminate treatment is still worse; since there is nothing that requires so delicate and careful a consideration as the proper methods of guiding, controlling, and training the dispositions of children.

In the discernment of the character of children, a careful attention should be given to the temperaments; indeed, a knowledge of temperamental distinctions is one of the most important of the teacher's accomplishments. Says an experienced educator, "If I know the temperament of a child, I know how to approach him to accomplish a given object, to what motives to appeal, what influences to bring to bear upon him, etc." The four great distinctions, of temperament,—nervous, sanguine, lymphatic, and bilious are strongly marked and easily discerned. In the *Scientific Basis of Education* by John Hecker

(N. Y., 1868), they are thus described: "The peculiarities of the nervous temperament spring from the fact, that in such a physical organization, the brain and nervous system predominate, and their indications take precedence in the make-up of the individual, both as to proportional size and activity. The functions of mental life are stronger than others in the system. The sanguine temperament, in like manner, indicates the predominance of the lungs and arterial system, as compared with the other physiological functions. The lymphatic temperament is accompanied by a similar predominance of the functions of the stomach and digestive apparatus, and of the glandular and lacteal system; and the bilious temperament, by a similar predominance of the functions of the liver, — the great secreting organ of the body." The same writer enumerates with much minuteness the peculiarities of disposition attendant upon these distinctions of temperament. "Up to the age of puberty," he remarks, "growth being the leading necessity of life, the lymphatic conditions, as a general rule predominate." Children of a nervous temperament when the brain is well developed, "are eager to learn, and learn easily and fast, being readily impressed through the mental faculties." They are, however, less retentive of what they learn, than those of the bilious temperament, have less warmth of disposition than those of the sanguine temperament, and are less susceptible to the ordinary methods of training than those of the lymphatic temperament. Children of the sanguine temperament are said to be volatile, more swayed by the pleasures of the senses and less interested in merely intellectual employment; but they are characterized by a great degree of active energy, and hence desire and need more physical exercise. Children of the lymphatic temperament receive impressions, as distinguished from ideas, readily, but do not retain them as permanently, as those of the bilious temperament; they lack also the physical activity of the sanguine temperament. The bilious temperament is said to give permanence to all impressions, though their reception is comparatively slow and difficult. "When we consider," says Mr. Hecker, "that children in a school are collected, not as operatives in a factory, for what they *can do*, but for what *can be done* to them — what they can receive — it is evident that differences of temperament, which involve such important variations in the proper mode of training, cannot be ignored in classification, without severely affecting the results of education." This writer, however, who has made to a very great extent the phrenological discriminations of brain structure the "scientific basis of education," remarks in this connection, "It is not to be supposed that the mental disposition of the child resides in the temperament. This depends directly upon the organization of the brain; but the temperamental conditions exert a marked influence upon the activity of the brain, and, both directly by growth and indirectly by the senses, modify the mental disposition."

To what extent the principles of *phrenology* may be applied to education, by affording a means of scientific discrimination, has been considerably discussed. The only question to decide is, whether phrenology affords a reliable means of discerning the mental peculiarities of different individuals, or how far such peculiarities are manifested in cerebral structure; since, if they are unerringly thus indicated, a means is in this way afforded, in connection with the temperaments, of ascertaining the capacities and capabilities of children, which educators cannot properly ignore.

In whatever way, however, the educator may obtain his knowledge of the peculiar dispositions and talents of his pupils, it is essential that this knowledge should be acquired, and that it should modify his treatment of his pupils, physical, moral, and mental. — See Spurzheim, *Principles of Education*, with Appendix by S. R. Wells (N. Y., 1847); Hecker, *Scientific Basis of Education* (N. Y., 1868); Bain, *The Study of Character* (London, 1861).

CHARLEMAGNE, Charles the Great, or **Charles I.,** king of the Franks and emperor of the West, was born in 742, and died in Aix-la-Chapelle, in 814. He was one of the greatest monarchs that ever reigned, and no less distinguished in the history of education than in political history. Though, from his earliest youth, a great and impetuous warrior, he fully recognized the importance of the educational interests of his empire, and patronized them with a devotion such as has been shown but by few princes. It was his clearly conceived plan to elevate the Franks and the Germans to an educational level with the countries which at that time excelled in the world of letters, — chiefly Italy and Ireland. Amidst all his wars of conquest and the cares of a vast and steadily extending empire, he never ceased to labor to supply the deficiencies of his early education. His thirst for knowledge extended to all the different branches of science. The letters which he addressed to Alcuin abound in grammatical, arithmetical, astronomical, and theological questions. He completely mastered the Latin; and he studied Greek in order to be able to compare the Latin translation of the gospels with the original. He personally discussed with the bishop the most subtle theological questions, and was indefatigable in searching for all the information necessary to a thorough understanding of all controverted points. He appreciated profound learning, and was anxious to attract to his court as many scholars as possible. His chief adviser was Alcuin, with whom he became acquainted in 781, and whom he appointed instructor of his court school (*palatinate school*). Though he succeeded in gathering at his court a brilliant galaxy of men of genius, he was himself never satisfied, incessantly aiming at still higher results. His desire to have twelve teachers like St. Augustine and St. Jerome drew from the astonished Alcuin the reply, that the Creator himself had only had two such men. Alcuin, conjointly with Rhabanus Maurus, Eginhard, and others, instituted at the court of Charlemagne a kind of literary academy, in which the emperor himself and several members of his family took an active part. Though this may not have been an academy of science in the modern sense of the word, there was probably some established association of the literary men living at the court.

Charlemagne being convinced that the clergy were the only class who could furnish the large number of instructors whom he needed for his subjects, adopted measures for the thorough education of that class. In 787, he addressed a letter to the abbot Bangulf at Fulda in which he urged the most thorough instruction of all candidates for the priesthood, in order that they might be enabled to understand more fully the Sacred Scriptures, and to communicate their knowledge more effectively to others. He also enjoined that schools should be established in connection with all the cathedrals and convents. In 789, it was ordered that reading, writing, arithmetic, grammar, and singing should be taught in these schools. Attributing very great importance to the development of the language of the people, in 794, he issued an edict requiring that the faithful should be taught the Lord's Prayer and the Apostles' Creed in German, and that no one should teach that God could only be worshiped in the Latin, Greek, or Hebrew tongues. In 802, he enjoined upon all priests, parents, and godfathers to provide for the instruction of children committed to their care, in the tenets of the Christian faith and in the Lord's Prayer; and, in 804, he ordered that all those who did not know the Lord's Prayer and the Creed should be scourged, and required to fast until they had learned both. These efforts were zealously supported by the bishops; and the councils held at Mayence, Reims, and Tours declared in favor of using the native tongues spoken in the empire, for the instruction of the people, in place of the Latin. Even the idea of organizing a system of public instruction began to be conceived at that time, as appears from a rescript addressed by bishop Theodulf of Orleans to the priests of his diocese, admonishing them to keep school every-where (*per villas et vicos*), and to ask no pay, but only to receive gratuitous offerings in return for the service rendered. — See Gaillard, *Histoire de Charlemagne* (4 vols., 2d edit., Paris, 1819); Lorenz, *Karl des Grossen Privat- und Hofleben*, in Raumer's *Histor. Taschenbuch*, 1832); Heppe, *Das Schulwesen des Mittelalters* (Marburg, 1860); Hallam, *Europe during the middle ages;* Schmidt, *Gesch. der Pädagogik*, vol. II.

CHARLESTON, College of, at Charleston, South Carolina, was founded in 1785. It is nonsectarian. The patronage has been almost entirely confined to the city, one great object being to prevent the youth of Charleston from losing their acclimation by absence from the city during a critical period of their lives. There being no dormitories, the students enjoy the advantage of domestic influences. The institution has a valuable museum of natural history, a library of 10,000 volumes, productive funds to the amount of $200,000, and scholarship funds to the amount of $33,000. The value of the college property is $50,000. In 1875—6, there were 5 instructors and 35 students. The presidents have been as follows: the Rt. Rev. Robert Smith, the Rt. Rev. N. Bowen, the Hon. Mitchell King, the Rev. Jasper Adams, the Rev. Dr. Brantley, Wm. P. Finley, and N. R. Middleton, LL. D. (now in office).

CHART (Gr. χάρτης, Lat. *charta*, a leaf of paper), a large sheet generally of pasteboard, containing a synoptical exhibit of letters, words, colors, plants, etc., to be used in giving instruction, particularly to classes. This is a very useful piece of school apparatus, since by means of it the eye is addressed, and large numbers of pupils may be taught simultaneously; while the teacher is relieved from the trouble of writing out or drawing on the blackboard what is to be presented. In teaching *color* by object lessons a chart is indispensable, as it exhibits, in a methodical way, the objects themselves. Several excellent charts for this purpose have been constructed. Charts are also very useful in teaching phonics. In higher instruction, there are many subjects in which the use of charts affords an important means of illustration; and, hence, we find in school rooms charts of botany, physiology, chemistry, astronomy, etc. While the rapid sketching of an illustration on the blackboard has many advantages for certain kinds of illustration and teaching, the more accurate delineation of objects by charts is often to be preferred, and, therefore, no school room can be completely furnished without sets of these articles.

CHEEVER, Ezekiel, one of the earliest and most celebrated teachers of New England, illustrious not only for the extraordinary length of his service, which lasted seventy years, but for his scholarship and classical attainments. He was born in London, England, in 1614, where he received an excellent education. At the age of 23, he emigrated to America, landing at Boston. He did not remain there, however, but took part with Theophilus Eaton, Rev. John Davenport, and others in planting the colony of New Haven; and held the office of deacon, from 1644 to 1650, in the first church established at that place. He commenced his career as a school-master in 1638, teaching the first free school of New Haven till 1641, when he took charge of a grammar school of a higher grade. These schools, like the New England schools in general, were not common or public schools, open to all without expense, but were partly supported by endowments and partly by tuition fees. The principal studies pursued were Latin and Greek. Until 1650, Cheever continued to take charge of this school, and as is remarked by one of his biographers, "devoted to the work a scholarship and personal character which left their mark forever on the educational policy of New Haven." At the date mentioned, he removed to Ipswich, in Massachusetts, where he took charge of the grammar school of that town, and made it famous by his faithfulness, scholarship, and skill. From 1661 to 1670, he taught the Town Free School in Charlestown, in the latter year removing to Boston, which became the scene of his labors for 38 years thereafter. Here he was appointed head-master of the "Free Schoole," known since 1790 as the "Latin School," being engaged by the governor and select men at a salary of "sixtie pounds p. an.", and allowed the "possestion and use of ye schoole house." This school, under his long and faithful service, became the chief classical school, not only of Massachusetts Bay, but of all the English colonies in America. Some of the most eminent men of the period were educated under Master Cheever; and in the autobiographies which some of them have written, they have left most sincere testimonials of respect and affection for their old and venerable teacher, as well as highly interesting pictures of school life in those early days. Among these pupils the Rev. Dr. Cotton Mather became the most celebrated; but perhaps the most interesting sketch of Mr. Cheever's school is contained in the *Autobiography of the Rev. John Barnard*, drawn up in 1766, in the 85th year of the writer's age, and first printed in the *Collections of the Massachusetts Historical Society*. "I remember once," says Barnard, "in making a piece of Latin, my master found fault with the syntax of one word, which was not so used by me heedlessly, but designedly, and, therefore, I told him there was a plain grammar rule for it. He angrily replied, there was no such rule. I took the grammar and showed the rule to him. Then he smilingly said, "Thou art a brave boy; I had forgot it." And no wonder; for he was then above eighty years old." He was a strict disciplinarian, and corporal punishment was often resorted to, and not sparingly applied, in his school; but severity was tempered with kindness, and his venerable presence was accompanied by "an agreeable mixture of majesty and sweetness, both in his voice and countenance," that secured at once obedience, reverence, and love. Such is the pleasant testimony of one of his pupils. He died in 1708, in the 94th year of his age; and we are told by Dr. Mather that "he held his abilities in an unusual degree to the last, his intellectual force being as little abated as his natural." Says one of his biographers, "It was his singular good fortune to have lived as an equal among the very founders of New England, with them of Boston, and Salem, and New Haven,—to have taught their children, and their children's children, unto the third and fourth generation—and to have lingered in the recollections of his pupils and their children, the model and monument, the survivor and representative of the Puritan and Pilgrim stock, down almost to the beginning of the present century." At his funeral, which took place from the schoolhouse, there were present the governor, councilors, ministers, justices, and gentlemen; and Dr. Mather preached a funeral sermon on the occasion, in which he not only eulogized his "faithful, successful, venerable, and beloved teacher," but took occasion to deliver a lecture upon the duty of towns and parents to provide for the education of children. This sermon was printed under the quaint title of "*Corderius Americanus, an Essay upon the Good Education of Children, and what may Hopefully be Attempted for the Hope of the Flock; in a Funeral Sermon upon Mr.* EZEKIEL CHEEVER, *the Ancient and Honourable Master of the Free-School, in Boston, etc.*"

The most noted of Cheever's publications was a Latin accidence, entitled *A short introduction to the Latin Tongue*, which, for more than a century, was the hand-book of most of the Latin scholars of New England, and very highly commended. An edition of this celebrated work was published in 1838, with testimonials from the most distinguished scholars, asserting its merits, and commending its restoration to use in the schools. President Quincy of Harvard College said, "It is distinguished for simplicity, comprehensiveness, and exactness; and, as a primer or first elementary book, I do not believe it is exceeded by any other work, in respect to those important qualities."—See BARNARD, *Educational Biography* (N. Y., 1861).

CHEKE, Sir John, an eminent English scholar and teacher, was born at Cambridge, in 1514, and died in 1557. He was educated in the university of Cambridge, and was appointed in 1540, professor of Greek in that institution. In 1544, he became tutor to prince Edward: and on the accession of his pupil to the throne, he was rewarded with an annuity and a grant of land. In 1551, he was knighted, and soon after rose to the office of secretary of state. On the accession of Mary, he was compelled to leave England, as he had favored the cause of Lady Jane Grey, and he supported himself for some time at Strasburg by teaching Greek. Being arrested in Flanders, by order of Philip II. of Spain, he was carried a prisoner to London and confined in the Tower, when, in order to save his life, he abjured his religion, and became a member of the Catholic Church. Repentance for this act, it is said, preyed upon his mind, and shortened his days. He wrote many works, evincing profound scholarship and excellent taste; among which may be mentioned, *Epistles on the Death of Bucer*, and *De Pronunciatione Græcæ potissimum linguæ disputationes* (Basel, 1555). The only work in English published by him was a pamphlet entitled *The Hurt of Sedition, how Grievous it is to a Commonwealth* (1549). Among his unpublished manuscripts, was a translation of the Gospel of St. Matthew, in words derived solely from Saxon roots, and a plan to change the English orthography by a kind of *phonography* — spelling by sound. Before his time, the study of the Greek language and literature had been greatly neglected in England; but, through his efforts, it was established as an essential part of a learned education. He was deservedly considered one of the most learned men of his age.—See STRYPE, *The Life of Sir John Cheke* (Lond., 1705).

CHEMISTRY, although one of the youngest branches of physical science in its development, is one of the most important, from an educational point of view. But the attention may be so readily arrested by its many easily recognized points of contact with the individual and society, in its numberless applications in the household, the shop, the farm, etc., as well as in the industrial processes on a grander scale, that any value it may possess, as a purely disciplinary agent, may be overlooked, even by teachers of it, and it may be regarded too much, simply as a low utilitarian element in an educational course, however valuable it may be admitted to be. It is, nevertheless, true that, in recent years, much that had contributed a peculiar attractiveness to chemistry as a branch of instruction, seemed inextricably involved in discussion. The perspicuity of its nomenclature, the precision of its statements, the simplicity and comparatively limited number of the laws involved in its most complex phenomena, were all apparently affected. But it has at last emerged from this formative condition, so changed to be sure, that many well educated in chemistry a few years ago may be obliged to recast their knowledge in new moulds, but with a system of philosophy which has much clearer and more comprehensive generalizations. It has, moreover, lost nothing of its peculiar character as perhaps the most sharply defined branch of physical science. The changes have not been so much those of abandonment of views formerly held, as of their expansion, to provide for the wonderful accumulation of facts since the science first took form about the beginning of the century. The old nomenclature survives only in a few general principles. The names, being out of accord with established and accepted facts, were too precise, and expressed too much.

It may be felt that the *New Chemistry* is too elaborate and complex to permit of profitable introduction; but a closer examination will show that it still possesses its former peculiar simplicity and directness of statement, that its notation is as expressive as ever, that it requires no application of mathematical analysis in working out or stating its generalizations, that these are as easily reached from facts within the comprehension of the pupil, as ever, and that they are just as susceptible of reproduction, for and by the pupil, with comparatively little and inexpensive apparatus. No doubt, more depends now upon the faithfulness with which it is taught. There is more of a philosophy, as well as a larger body of facts, and the mind of the pupil must be led to discern the principles that underlie the facts. A necessity for the conception of a threefold division of matter arises in the modern explanation of chemical phenomena. The indivisible, indestructible, insensible *atoms* of the old chemistry are accepted; but the interpolation is required of equally insensible *groups* of atoms, called *molecules*, between the atoms and the sensible aggregations of matter called *masses*. The word *molecule* henceforth ceases to be used interchangeably with *atom*. Forces may act upon or within these molecules; and when they act within, a chemical change is said to occur. Thus, ice composed of molecules is converted into water by releasing these molecules, in a great measure, from cohesive attraction, and thus allowing them perfect freedom of motion among themselves, apart from any directive force. By continued heating, repulsive force predominates; and they separate, but still as molecules, the atoms as such being unaffected. The electrical current, whatever that may be, invades these molecules; dissects off atom from atom; demonstrates the molecules to be groups of hydrogen and oxygen atoms, held together by a force named *chemical affinity* or *chemical attraction*, or better still *chemism*. However chemical phenomena may be influenced by physical conditions, they involve, essentially, only this play of the atomic force, between atoms, within molecules. This apparently restricted and sharply defined character of the field of chemistry is calculated to render it more easy of comprehension, as a whole, by the pupil, than most other branches of physical science; whilst it still retains, in a high degree, the advantages conceded to such branches as instruments for the culture of the faculty of abstraction and generalization, and for fostering a habit of careful, close inductive reasoning, in connection with that of cautious, patient observation,—habits that have so much to do with the formation of correct judgments in the affairs of every-day life.

Although a fuller consideration of the purely disciplinary qualities of chemical studies might exhibit them in favorable comparison with some of the usual branches taught, there can be no doubt that it very properly holds its place, largely by reason of the character of the information it imparts. It may be regarded, therefore, as the chief aim of the teacher of chemistry, to make the pupil acquainted with the chemical properties of matter, and with the leading processes by which comparatively worthless material has high value imparted to it. And yet the manner in which this information is acquired, to whatever extent the science may be taught, has far more to do with the subsequent practical value of the study than the amount; and a proper mode of imparting the facts will also prove of high educational value in other respects. It is only facts so connected, and so lodged in the mind that they readily suggest themselves when an occasion may demand them, that are fruitful. But chemistry has such a body of minute facts, that the text-books are necessarily constructed largely on a cyclopædic plan; masses of facts are classified as well as they can be, and are pigeon-holed away for reference rather than for a connected inductive study. Nothing is more natural for the pupil than to run into the vicious habit of simply memorizing. There is no tendency more decided in pupils with memories well trained by early studies. It will require very little encouragement on the part of a teacher to have the pupil reproduce the numerical statements of a lesson, the specific gravities to the last decimal, the equivalents of elements, the melting points, etc. Yet these form the very class of facts which scarcely survive the day of recitation, and for which the chemist would rely upon his reference-book in case of need. This is also true of a large number of other facts of subordinate importance. Again, facts of the highest importance, assigned by a proper classification to one place, may find most forcible re-statement, in many other places, and in other connections. It rests with the teacher to direct the pupil continually in his study, by calling his attention to the most important facts, and by holding them up to view in all their relations, particularly in their practical bearing upon each other. A comparatively few facts, thus exhaustively studied, will form a nucleus around which further chemical knowledge may accumulate, whilst the mind will be impressed with the interdependence of chemical processes. It is also apparent that the process by which these facts are accumulated is an educating process of the highest order. The pupil soon falls into the habit of considering all facts in their relations, and refuses to be satisfied with uncorrelated facts; and he carries this habit into the consideration of all matters, and seeks a wider view of every subject.

In teaching chemistry, three methods readily suggest themselves: (1) By text-books; (2) By lectures, accompanied by experiments; and (3) By experiments or investigations performed by the pupil. These methods are so different in themselves and in the end to be accomplished, that they cannot be compared as to effectiveness; but they so fully supplement each other, that they should as far as possible accompany each other. The tendency, at the present time, is to undervalue the text-book. Whilst there can be no doubt that, by itself, it yields the least return for the time, attention, and drudgery of both teacher and pupil, as an adjunct to either of the other methods, it not only imparts fullness to the knowledge, but also renders it more precise. Another incidental advantage of the highest character consists in a certain facility for reference, which its study imparts; and, in many cases, an ability to make use of the literature of the science, and, by means of it, to study up a subject, or investigate a particular case, may be of far more value than a memory thoroughly crammed with facts.

Lectures accompanied by illustrative experiments are generally conceded to be valuable, and to some extent indispensable, aids in teaching physical science. Text-book study, however faithful and earnest, must be supplemented by them. The facts formulated in words must be vitalized, and re-enforced by their objective reproduction. Presented thus directly to the senses, they not only become more intelligible, but possess a peculiar charm, that impresses them upon the memory, and renders the whole study more profitable, as well as more attractive. But lectures are more particularly adapted to teach the general principles of the science, and to develop, to its fullest extent, the disciplinary value of the mode of reasoning employed in the investigation of the truths of nature, and also to cultivate the faculty of observation. They are, however, in no wise adapted to displace the text-book. They are feeble in teaching details. Simple statement and re-statement, and illustration combined, will not impress these upon the memory. If the pupil be required to take full notes, or indeed be allowed to take any notes at all, it will be at the loss of much that is peculiarly valuable in such lectures. With the faculty of observation in the pupil generally untrained, any division of attention between writing, and listening, and observing will greatly reduce the proper effect of the lecture. Great pains should be taken to arrange the matter, and bring it before the pupil so that the salient points may impress themselves upon the memory; and the lecture should be filled in from memory afterward, or it may be a still better plan, in many cases, to furnish, on the blackboard, a very brief syllabus of the lecture. But much of the effectiveness of a lecture is lost in attempting even incidentally to teach numerous details by means of it. It cannot be expected, nor is it at all necessary, to reproduce all, or indeed a very large proportion, of the facts and processes of the text-book, in order that it may be fully comprehended. There are many facts and processes in chemistry that possess a typical character, aiding directly in the comprehension of many others, and these are the ones most likely to be drawn upon by the lecturer. There is no branch of physical science that admits of a fuller illustration and verification of its facts with comparatively limited and inexpensive apparatus, nor any in which the want of thorough practical knowledge and skill on the part of the experimenter is productive of less damage to the apparatus employed. Up to a very recent date, simple entertainment and amusement have been regarded, almost equally with instruction, as the objects of such lectures. The most sensational experiments that the science and the means at command could afford, were impressed into service; and these, too, often loosely connected, or arranged in the order of the text-book. There is still unfortunately a residuum of expectation of something of this kind. The apparatus and experiments with it are apt to be made the display features of the instruction. Whilst simple entertainment, or even amusement, may sometimes legitimately accompany lectures on chemistry, it should be only as a natural incident; and even then, should not occur too often, since it is apt to create an expectation of, if not a desire for, such features; and this will seriously divert the attention of the pupils from the line of thought which should always connect the experiments. Every experiment should come upon the scene like a well-trained servant, just at the right point of time to add its proper effect to the total effect of the lecture; and, in no case, should it control the lecturer. An experiment without such a subordinate relation is as much out of place as a word without proper connection in a discourse. As the text-book is largely a compendium of details, its somewhat arbitrary plan of arrangement, and its formal, systematic, didactic treatment must give way to the more instructive, as well as more attractive, Baconian method of insinuating knowledge into the mind of the pupil in the manner in which it was discovered. Topics should be taken up, discussed, and illustrated. The most familiar phenomena should be noticed, and the lecturer should place himself, with his appliances, in the position of an investigator,—an interrogator of nature, and an interpreter of her replies. The point of attack, and the line of investigation should be carefully determined upon and wrought out, so as to evoke the most valuable information, and exhibit the logic of facts inductively employed. The pupil will readily follow the investigator in his alternate inductions and deductions, as he "guesses and checks his guesses." He will thus not only learn the subject, but acquire, in a measure, the attitude of mind by which facts are discovered, judged, and arranged, and by which also they may be turned to practical account. To take a very simple case: carbonic acid being selected as the subject, a burning candle may suffice to start the inquiry which will lead up to it, and far beyond it. Then, out of the numerous questions that suggest themselves, the chemist might ask whether, as the material of the candle evidently undergoes a radical change, the air surrounding it is affected? It is placed in a jar, and covered; it goes out. Is the air changed? Test with lime-water. Yes. Will a splinter change it in the same way? Try. Yes. It is then allowable to guess that all burning bodies affect the air in the same way. The guess may be checked by employing a wax taper; then an oil-lamp; then a gas-jet. The inference then becomes the very plausible hypothesis, that burning bodies invariably affect the air surrounding them in such a way, that it will render lime-water turbid. All would be satisfied to stop at this conclusion; but a jet of burning hydrogen is at hand, and on repeated trials, each time with greater care, it fails to give the result predicted from the hypothesis. The many facts only led up to that degree of certainty; the one discordant fact shakes the whole fabric. The case is now looked at anew. What have these bodies in common so as to produce this identical result in burning, which hydrogen has not? Carbon. A piece of charcoal is tried. It confirms the conjecture which led to the experiment with it. More cautiously than before, the hypothesis would then be modified to suit the new fact, — bodies containing carbon in burning modify the atmosphere in a certain way. From this point, all the leading properties of carbonic acid could be developed, with but little more apparatus than may be found in any household: its specific gravity, by pouring it from ordinary pitchers, or running it off by means of a syphon, by weighing it in a paper bag on ordinary scales, etc.; its solubility in water, and the solvent properties it imparts to the water, by passing it through lime-water, until the precipitate is re-dissolved, then re-precipitating it by boiling the solution, etc. The other constituents of the atmosphere are, in a similar way, readily brought within the range of inquiry. Such a mode of treatment has for the pupils all the freshness of an original investigation. It arouses a spirit of inquiry, and quickens observation; since they will be far more apt to observe closely when they are to discover what is to be seen, than if required simply to see what is described. There will, moreover, be a pleasing surprise at the evolution of clear general principles from apparently confused inquiries. In such lectures, a sensational experiment without a direct bearing upon the subject, would be entirely out of place. Humble and apparently trifling experiments are frequently found to present the truth in its simplest, clearest, most intelligible form. In all cases the chemical notation should be freely employed. All reactions should be expressed by symbols upon the blackboard. One fact, however, should be continually kept in mind in arranging such a lecture, and bringing the phenomena before the pupils; namely, that in pupils of all ages, without any previous training in this direction, the power of observation is generally exceedingly feeble, and that they can follow the lecturer but slowly. They are very apt to overlook or mistake the feature to be observed, or to be misled by some unavoidably prominent accessory. An examination upon a lecture of the simplest character will reveal this fact. The most salient points, even, will often be found to be wanting. A great part of the value of the illustrations of scientific lectures in our higher institutions, and of the highly elaborated popular lectures is lost for the same reason. This difficulty may be remedied in a great measure by adding the other method of teaching suggested; that is, by allowing the pupil, under the direction of the teacher, to perform the experiments and conduct the investigation, requiring him to keep accurate notes, and, in some cases, to reproduce the results in the form of a lecture. Chemistry is peculiarly adapted to this mode of instruction. A few test-tubes, flasks, corks, etc., and very little material will put it into the power of the pupil to reproduce the explanation of many facts. He will learn more by a few failures than by a whole series of experiments successfully exhibited in a lecture, and will realize how much of care and painstaking accuracy must be expended in the preparation of every successful experiment. He will appreciate the importance of the most trifling essential condition, and will find that here no oversights, no mistakes, no negligence can be condoned; but that failure follows them as inexorably as effect follows cause. He will be surprised to find how apparently trifling an oversight often lay between him and success, and will learn to estimate conditions by other standards than their apparent magnitude or importance. He will thus form the habit of observing closely, and of noticing every thing exhibited in the course of lectures, and will carry this habit into all the affairs of life.—See DAUBENY (Prof. Charles G.B.), *On the Study of Chemistry as a Branch of Education*, in *Lectures on Education* (Lond., 1855).

CHICAGO, the principal city of Illinois, the commercial metropolis of the North-western section of the Union, and the fifth in population of the cities of the United States. Its population, according to the national census of 1870, was 298,977; but, according to the special census of 1874, was 395,408. This city was incorporated March 4., 1837; and the first census was taken in July of that year, when it was found to contain a population of 4,170. Its rapid growth is probably without a parallel in history. During the 20 years preceding the census of 1874, its increase was nearly 579 per cent. The public schools of Chicago were first classified and graded by John C. Dorr, the first superintendent, who served from May, 1854, to March, 1856, when he was succeeded by William H. Wells, who continued in office till August, 1864, and was succeeded by Josiah L. Pickard, the present incumbent. The first public school building was erected in 1844, but there was no published school report till 1854.

School Statistics.—For the year ending August 31., 1875, the following statistics were reported:

Number of schools	41
Number of pupils enrolled	49,121
Average daily attendance	32,999
Number of teachers	700
Number of months schools were open	10
Amount received from school tax fund	$765,968.21
do do from state fund	109,044.40
do do from rents, interest, etc.	91,684.58
Total receipts	$966,697.19
Amount paid for teachers' salaries	$535,706.79
do do for school buildings	155,564.26
do do for school sites	9,769.98
do do for fuel and supplies	75,729.22
do do for other expenses	38,068.24
Total expenditure	$814,838.49

The school age is from 6 to 21; and the number of children in the city between those ages was reported, in special census of Oct. 1., 1874, as 102,555, out of a total population of 395,408; of these 15,947 were reported as at work, and 33,547 as neither at work nor in school. The whole number of children reported as enrolled in the public schools was, at this date, only 36,416; and the number in private schools, 16,645.

School System. — The system consists of a board of education of fifteen members, appointed by the mayor of the city, subject to the approval of the common council, 1 high school, 3 division high schools, 1 normal school, 21 district schools with grammar and primary departments, and 15 independent primary schools. The term of office of the members of the board is three years, five members being appointed each year; and at least five years' previous residence is requisite for eligibility to appointment. By the "act to establish and maintain a system of free schools", which went into operation July 1., 1872, the board of education has power, "with the concurrence of the city council", (1) To erect or purchase buildings suitable for school-houses, and keep the same in repair; (2) To buy or lease sites for school-houses with the necessary grounds; (3) To issue bonds for the purpose of building, furnishing, and repairing school-houses, for purchasing sites for the same, and to provide for the payment of said bonds; and to borrow money for school purposes upon the credit of the city. It is also empowered, (1) To furnish schools with the necessary fixtures, furniture, and apparatus; (2) To maintain, support, and establish schools, and supply the inadequacy of the school fund for the salaries of teachers from school taxes; (3) To hire buildings or rooms for the use of the schools or the board; (4) To appoint teachers and fix the amount of their compensation; (5) To prescribe the school-books to be used, and the studies to be pursued in the schools; (6) To divide the city into school districts, and, from time to time, to alter the same, and create new ones as circumstances may require; and (7) To enact such ordinances as may be necessary or expedient for the proper management of the schools. The board of education is not permitted to increase the expenditures beyond the amount received from the state common school fund, the rental of school lands, and the amount annually appropriated for such purposes; nor can it levy or collect taxes, or demand that the city council shall levy any tax for school purposes, except on its concurrence. The officers of the board are a president, vice-president, secretary, clerk, assistant clerk, school agent, and messenger; also a superintendent of schools and an assistant superintendent of schools, to the latter of whom is entrusted the more immediate supervision of the work of instruction and discipline in the schools. There is also a building and supply agent, who has the immediate supervision of all the buildings and grounds used for school purposes, and who attends to all repairs, and to the purchase of needed supplies.

The *course of study*, below the high school, comprises eight grades, four of which are known as grammar grades, and four as primary grades; the grammar schools, however, embrace all the eight grades, instruction in the four lower grades being given in the primary departments. The high school course is arranged for four years, and affords instruction in the higher English branches and in the modern languages, preparing for college such of its pupils as desire it. The division high schools are organized with a course of study for two years, excluding all foreign languages, except German, which is an optional study.

The *studies prescribed* for the primary schools are reading, the rudiments of arithmetic, spelling, elementary geography, and writing; to these, in the grammar schools, are added higher geography, English grammar and composition, and the history of the United States. Music and drawing are systematically taught throughout the course. To each grade some topics are assigned for which no text-books are provided. These topics constitute the *oral course*, which includes various branches of science presented in a familiar way, and designed to develop the intelligence of the pupils, as well as to impart useful information. German is taught in 15 schools, besides the high schools, and is supervised by a special superintendent. There is a division high school in each division of the city; and the studies taught are natural science, language, mathematics, history, and civil government. German, music, and drawing are optional. The establishment of these schools, with their brief and practical course of study, was dictated by the fact that more than fifty per cent of those who annually enter the High School, leave before the completion of the second year.

Examination, Licensing, and Appointment of Teachers.—Candidates for teachers' certificates are examined by a committee of the board of education, consisting of four members, and the superintendent. Those who pass the examination receive, at first, *partial certificates*, testifying to their moral character and intellectual attainments. After trial, and upon the joint recommendation of the committee on the appointment of teachers and the committee on the school in which the teacher is employed, the board of education grants a *full certificate*, certifying to the competency of the holder in regard to all matters of instruction and discipline. No person is eligible to any position as a teacher who is not eighteen years of age. Teachers are appointed annually by the board of education, and at other times by a committee of the board, when vacancies occur. These latter appointments are subject to confirmation by the board. Each teacher, in the four higher grades, is responsible for the instruction and discipline of 48 pupils, and in the lower grades for 62. About half the teachers in the high and normal schools are males; but in the other schools there are very few males, —only 21 out of a corps of 671.

Salaries of Teachers.—Male teachers receive from $1,000 to $3,000 per annum, according to position and experience. Female teachers receive from $550 to $2,000. Certain salaries are attached to particular positions, and no distinction as to sex is recognized in this regard.

The *private schools* in Chicago are quite numerous, and many of a high degree of efficiency. The census of 1874 enumerated 144 such schools, including the various classes of parochial and denominational schools, female seminaries, select schools, kindergartens, etc. The number of pupils in these schools was reported as 28,251,—14,113 males, and 14,138 females. The whole number of teachers employed was 697, of whom 239 were males, and 458 females.

CHICAGO, University of, in Chicago, Illinois, was chartered in 1857 and opened in 1858. The building, a magnificent structure, costing over $117,000, is situated in the southern part of the city, in a beautiful grove of oaks. This site was donated by Stephen A. Douglas. The charter provides that the majority of trustees and the president of the university shall be Baptists, but otherwise no religious test or particular religious profession is required for admission to any department of the university, or for election to any professorship or other place of honor or emolument in it. The institution embraces a preparatory department, a collegiate department, a law department, and a medical department. The preparatory department comprises a classical course of four years and a scientific course of two years. Besides the regular preparatory department, Wayland Institute, at Beaver Dam, Wisconsin, formerly Wayland University, is now conducted as a preparatory department of the university. The collegiate department comprises a classical course of four years; a scientific course of four years; a course in astronomy of two years; and a course in practical chemistry of two or three years. Provision is made for students who desire to take only a partial course. Young women are admitted to the preparatory and collegiate classes on the same terms as young men. There is a museum with a valuable collection of specimens in human anatomy and physiology, zoölogy, entomology, geology, numismatics, etc. The university also has valuable chemical and philosophical apparatus. The library contains about 20,000 volumes. In the rear of the university building and attached to it, is Dearborn Observatory, established in 1865, which forms the astronomical department. It is designed not only to furnish instruction in astronomy, but also to make original researches in that science, and aid in its application to geography. This observatory contains a fine equatorial refracting telescope, of 23 feet focal length, and 18½ inches aperture, constructed by Alvan Clark in 1864, and a meridian circle of the first class constructed in Hamburg, with all the necessary appliances. It is under the direction of Prof. Truman H. Safford. The price of tuition in the university is $70 per annum; room rent, $20. The university property is valued at $700,000, and there are scholarship funds to the amount of $48,000. The law department was organized in 1858. It is now also a department of the Northwestern University (at Evanston, Illinois), and is known as the Union College of Law of the University of Chicago and the Northwestern University. The course of study is for two years. The Rush Medical College forms the medical department of the university. This college was chartered in 1843, and organized in 1844; it became connected with the university in 1874. The new college building is near the new county hospital. In 1874—5, there were, in the preparatory and collegiate departments, 8 professors and 7 other instructors; in the law department, 5 professors and 2 lecturers; and in the medical department, 11 professors. The number of students was 611; namely, medical, 203; law, 103; Wayland institute, 96; preparatory, 100; collegiate, 109, of whom (allowing repetitions) 3 were resident graduates, 3 in astronomy, 7 in practical chemistry, 22 in partial courses, and 79 in the regular classes. The Rev. John C. Burroughs, LL.D., was elected president in 1858 and remained in office 15 years, when he was succeeded by the present incumbent, the Rev. Lemuel Moss, D. D.

CHILDHOOD. See AGE.

CHILI, a republic of South America, having an area of 126,034 sq. m., and a population, in 1872, according to official calculation, of 2,003,346, exclusive of 70,400 independent Araucanians. This is one of the few flourishing states of South America. It has been almost entirely free from civil wars, and its progress in education, literature, commerce, and general prosperity exceeds that of almost any other South American state. The government favors immigration from Europe; and, in 1865, the number of foreign born persons was 23,220, among whom there were 3,876 Germans, 3,092 English, and 2,483 French. According to art. 5 of the constitution, the Catholic religion was permitted to the exclusion of all others; but, in 1856, a treaty with England guaranteed full religious liberty to all English subjects; and, in 1865, an Act of Toleration was adopted as an amendment to the constitution, authorizing not only the exercise of non-Catholic religious worship, but also the establishment of non-Catholic schools. The number of Protestants is limited almost to the English and German immigrants and their descendants. Only a few Protestant congregations have been established among the natives by missionaries from the United States. The national language is the Spanish.

The Spanish conquest of the country began about 1535; and, during the Spanish rule, Chili formed a viceroyalty under the name of Estremadura. The war of independence began in 1810, and was virtually terminated in 1818. The independence of the country, however, was not recognized by Spain until 1844.

Public instruction in Chili is under the direction of the minister of justice and ecclesiastical and educational affairs. It is his duty to inspect all the schools and colleges supported by the national treasury, to appoint all the teachers and employés, to apply to congress for the necessary sums for their support, and to present every year a report on the condition and progress of education. The university of Chili regulates the studies and examinations which candidates for the different scientific courses are required to pass, examines and prescribes the text-books, makes out the programmes of examination, etc. The primary schools are, moreover, under the immediate direction of a general visitor of schools, who has deputies in all the provinces, and whose central office is at Santiago. It is his duty to visit the schools constantly, and to receive detailed information regarding the number of pupils and the conduct of the teachers, as well as the financial condition. The municipalities of each province exercise a vigilant inspection, and aid, according to the extent of their local treasuries, in supporting the educational institutions.

Primary Instruction.—The first organization of primary instruction in Chili was due to the zeal of President Montt, who regarded public schools as the firmest support of republican institutions. He offered in 1853, a reward of 1000 *pesos* for the best treatise on the following three questions: (1) What influence has public instruction on manners, public morality, industry, and the development of public wealth? (2) What educational organization is the most appropriate in view of the national peculiarities of the country and of its inhabitants? (3) What is the best way to provide for the support of public instruction? The prize was awarded, in 1855, to Miguel Luis and Gregorio Victor Amunatégui; and the views of the successful treatise were the basis on which the organization of public instruction was begun. According to this treatise, there were, in 1855, 394 public primary schools for boys, with 15,707 pupils; 95 schools for girls, with 4,297 pupils; total 489 schools and 20,004 pupils. The number of private primary schools was, for boys 194, with 5879 pupils, for girls 105, with 939 pupils; total 299 schools, with 6,818 pupils. The aggregate number of public and private primary schools was 788, with 26,822 pupils. Eight years later, in 1863, the number of schools had increased to 985 (588 public, 397 private), with 47,717 pupils (35,470 in the public schools, and 12,247 in the private). Of the 197 new schools which had been opened, 150 were female schools; of the increase of 20,895 new pupils, 11,027 were girls. The school population, embracing the children from the 7th to the 15th year of age, numbered in 1863, 167,409 boys and 167,838 girls; which shows that, notwithstanding the great progress that had been made, nearly six-sevenths of all the children of school age were growing up without any instruction. In bringing these facts to the knowledge of the country, the minister of public instruction stated, that, to carry out the law of 1860, which prescribed the establishment of a primary school for every 2,000 inhabitants and of two schools of a higher grade in the chief town of each department, the sum of 970,000 *pesos* would be required, instead of 208,000 provided for in the budget; also, to carry out the law of 1860, it would be necessary to establish 1670 elementary and 100 higher schools, besides those previously established. As the government did not deem it advisable to raise the cost of public instruction to the amount thus demanded, it encouraged the formation of private associations for the promotion of public instruction, and also authorized the "Brothers of Christian Schools" to establish schools; but though much has been achieved in this way, the number of schools is still insufficient, and the number of children attending school in proportion to the total population, was, in 1872, only 1 to 25. The number of public schools, in the same year, was 451; of private schools 706; the aggregate number of children attending school (public and private) was 54,821, and the annual expense for each scholar averaged 8.98 *pesos*. — The number of schools for adults, which are designed to afford the advantages of education to those who have grown up illiterate, was, in 1855, 10; and in 1863, 30, of which 24 were supported by the state. Two normal schools, one for male and one for female teachers, were established by President Montt, in 1863. The candidates for admission are required to be 18 years of age, and to furnish certificates of good behavior and good health. They are educated at the expense of the state, but engage to accept the position of teacher at the place assigned to them by the government. The smallest salary paid to a teacher is 300 *pesos*. The course of instruction in the normal schools is for 3 years. The public primary schools are supported by the state, by municipalities, or by monastic organizations. Elementary instruction embraces reading, writing, the elements of practical arithmetic, and legal weights and measures. The primary schools of a higher grade, which are gradually to be established in the capital of each department, but the number of which is as yet quite small, teach also Spanish grammar, higher arithmetic, drawing, an outline of the history of Chili, the constitution of Chili, and book-keeping.

Secondary Instruction.—The secondary schools of the republic embraced, in 1863, 13 state lyceums with 2,537 pupils, 4 episcopal seminaries supported by the state and, therefore, also regarded as state institutions, 6 monastic colleges with 210 students, and 53 private colleges with 2868 students. The study of the classical languages has of late, somewhat declined.

Superior Instruction. — The highest institution of the country is the *Instituto nacional*, comprising the university of Chili, a preparatory college, and a school of fine arts. The university, which embraces five faculties (philosophy and philology, law and political science, natural science and mathematics, medicine, and theology) is entirely modeled after the best institutions of the kind in Europe, and a large number of the professors are distinguished scholars of Germany and France. The university is richly endowed, and possesses excellent collections. It has published a year-book, called *Anales de la Universidad de Chile*, by means of which it keeps up a communication with similar institutions in Europe and America. Among the institutions connected with the university, are an observatory, a national museum, and a national library.

Special Instruction. — Of special schools, there are, at Santiago, a national school of art and industry, a military academy, a school of agriculture and veterinary science, with a model farm; a school of midwifery, an institution for the deaf and dumb, and a conservatory of music. The most important schools in the provinces are a school of mining at Copiapó, a nautical school at Valparaiso, a mariners' school at Ancud, a school of fine arts and industry at Talca; and commercial colleges at Valparaiso and Quillota.

In accordance with the recommendations of the prize essay, the government makes an annual appropriation for the establishment of public libraries in connection with public schools; and a large number have already been established. — See LE ROY, in Schmid's *Realencyclopädie*, vol. IX, pp. 848—857; *Anales de la Universidad de Chile;* AMUNATÉGUI, *De la instruccion primaria en Chile* (Santiago, 1856).

CHINA Proper is a country of eastern Asia, extending from lon. 98° E. to 123° E., and from lat. 18° N. to 43° N. Its area is about 1,553,000 sq. miles, or nearly half that of all Europe. Inclusive of its dependencies, it has an extent estimated at 3.970,000 sq. miles. The population of China Proper is estimated at about 404,000,000, (see BEHM, und WAGNER, *Bevölkerung der Erde*, vol. III., Gotha, 1875), while that of the vast dependencies, Mantchooria, Tibet, Mongolia, and Corea, is believed not to exceed 20,000,000. The traditions of the Chinese point to an immigration from the west, and distinctly affirm the savage character of their ancestors. (See *L'Histoire générale de la Chine* by Père Mailla.) Unlike the civilizations of western Europe, which were all imposed from without, the Chinese civilization seems to have developed spontaneously from within. Stagnant though it be in many respects, the claim that Chinese civilization has remained stationary for thousands of years seems unfounded. Civilization has had a peculiar development in China, but still it has made progress. There is an intense national pride among the people, which is not altogether without justification; as there is scarcely a modern invention of any note, with the exception of electricity and the steam-engine, which was not known to them many centuries ago. The mariner's compass, gunpowder, printing, porcelain, and paper were known to them soon after the Christian era. The chief religions are Confucianism, Buddhism, and Taonism; and the lack of religious elements in these systems has led to the charge that the Chinese nation is atheistic. Confucianism, for example, recognizes no personal God as an object of divine worship, while the other religious systems have grown into a farrago of jugglery, necromancy, and devil worship. In all the empire, there is but one temple consecrated to the worship of the Supreme Deity, and but one worshiper—the emperor—who celebrates the pageant once a year. This, however, is a degradation from an earlier and purer form of monotheism. The works of the ancient sages, and even the earlier works of Confucius abound in passages showing a higher and purer conception of God than afterward obtained. (See *Life and teachings of Confucius*, by Dr. Legge.) The language, like every thing else Chinese, is *sui generis*. It is neither Semitic, nor Aryan, nor Turanian. It is not, however, a monosyllabic language, as is commonly said, this error being due to the form of the printed words, in which the syllables are separated, whereas they are not separated in meaning. The alphabet is also peculiar. Instead of employing letters to represent sounds, they have letters to represent things and words. Hence, the language contains many thousand signs. A dictionary of the second century of our era contains 9,353 signs. The imperial dictionary of Kang-he, the most recent work of the class, gives 43,960. This makes the language one of extraordinary difficulty. The written language is only mastered by a small percentage of the population, and even scholars do not by any means master the whole number of signs. A knowledge of ten or twelve thousand is sufficient to make an accomplished graduate; and, with a knowledge of two or three thousand, one may make a very fair start as a literary man. The literature is said to be the most extensive in the world. The most prominent works are the so-called *Classics*, which are supposed to have been supervised by Confucius. They are five in number, and are held in the highest reverence, being looked upon as a standard from which there is no appeal. They are the sacred books of Confucianism, and are replete with rules for daily conduct, public and private. Apart from these *Classics*, and the commentaries upon them, which are legion, the most important part of Chinese literature consists of the histories of the several dynasties. The historian of the western Han, which ended A. D. 84, gives a catalogue of the works in the imperial library, comprising classics, philosophy, poetry, military tactics, mathematics, and medicine. The literature probably suffered somewhat from the barbarism of Chihwang-te, who attempted to immortalize himself, about 210 B. C., by destroying all the literature of the ages that preceded him.

Education is held in the highest honor. No government provision, however, is made for public education. The government fosters it only by making it the road to distinction, and by supporting the various examinations. Knowledge centers in a mere acquaintance with the aphorisms of the *Classics*. A scanty knowledge of reading, writing, and arithmetic is all but universal; but, owing to the peculiar structure of the language, one may be able to read a little, without having any knowledge whatever of the rest. Not more than three males in a hundred can read the classical books with readiness, and not more than one woman in a thousand. The only course of instruction necessary to obtain a government position, is a classical and historical one. The consequence is a disregard for all branches of study, which are not practical, and hence a most astonishing narrowness of all culture. The rights and duties of the government, and of the individual in his several social relations, form the chief subject of Chinese books and instruction. Confucius, in his system, adopts the principles of dependence and subordination, and the instruction of the schools aims to impress them carefully upon the student. The great end of all instruction in China is not so much to fill the head with knowledge as to make quiet and orderly citizens. Any thing like general culture is entirely unknown, except where the Chinese have been forced into contact with European nations. They have no need of science, for the *Classics* contain all that is worth knowing, and no need of geographical and historical knowledge beyond that of their own people, for they are "celestials," and all outside are "barbarians". Female education is almost unknown. Girls are very seldom instructed in anything but ordinary house-work; and yet a learned woman is held in honor. It is not thought right that parents should conduct the education of their own children, because the relation of parent and child is a holy one and would be disturbed by the necessary severities of the teacher. Children begin their studies with their sixth and seventh year. There is no compulsory education. School-teachers are not appointed by the state and need no official permission. Parents choose the teachers, who receive from $45 to $90 a year with board. A teacher takes from twenty to thirty scholars. Public school-houses do not exist. The arrangement of the schools is very simple; a teacher has a table and armchair, and every scholar has to provide himself with a desk and a chair. There is in every school-house a little altar dedicated to Confucius and to Wun-tschong-ya, the God of Science. Upon entering school, the boys receive their school names in place of their so-called "milk names." The first school-book is the *Path to the regions of classical and historical literature.* It begins with the methods of instruction and their necessity, the importance of the duties of children and brothers; and then follows an oversight of the different branches of knowledge: the great powers, heaven, earth, and man; the four seasons and the points of the compass; the five elements, "metal, wood, water, fire, earth;" the five cardinal virtues, "love, justice, wisdom, cleverness, truth;" the five kinds of grain, the six domestic animals, the seven passions, the eight notes of music, the nine grades of relation, the ten social duties. After this, follow rules for a course of academical study, with an index of the books to be used, a short account of the universal history of China, together with a list of the successive dynasties of the empire. The idea is, to take advantage of the receptivity of the memory at this period, to store it with facts to be afterward digested. The method of learning to read is as follows: The book is open and the teacher begins to read; the scholars have each a book, and with eyes upon the book pronounce word for word after the teacher. Only a line is read at a time, and this is repeated until the scholars have learned the pronunciation of every sign, and the line is then learned by heart. When this is learned, the scholar goes to the teacher, lays the book upon the table, turns his back to him, and recites it. Besides reading, writing is taught in all the primary schools, but there is no instruction in reckoning, geography, universal history, natural history, foreign languages, or even in religion. This reading and writing, however, for the most part, is the mere ability to pronounce or make the signs, and does not imply an understanding of what is read or written; as if one should read or write Latin or Greek words without any comprehension of their meaning. Those who wish to devote themselves to study receive a thorough exposition of the *Classics*, and write verses and essays. The written language is so difficult, that more time is consumed by the Chinese student in mastering it than is given in western countries to the acquirement of a liberal education; and the celebrated literary examinations are limited to the inquiry whether the candidates can read and write with readiness and grace. This study is overseen by teachers who have passed an examination. When one has acquired some reputation for learning, a number of young people gather around him to prepare themselves for examination under his instruction. Such private colleges are numerous both in the city and country. Lectures are given by the teacher upon the *Classics*, and essays and verses are written upon them once a week by the students. It is the custom of these students to learn a large number of standard essays by heart, in order to obtain a finished and correct style. There are four literary degrees: The first corresponds to our B. A., the second is the degree of "licentiate," the third, that of doctor, and the fourth, the degree of "member of the imperial academy." Public examinations for the degrees have existed in China since the Tang dynasty. There are three examinations for the first grade. The first is held by the mandarin of the district, and lasts several days. The candidate has to furnish seven essays and verses upon seven subjects, without a book or other help. The second examination is conducted by the prefect of the district, assisted by the literary chancellor of the province. The third examination is under the control of the chancellor, and is held twice in every three years. Whoever passes all three examinations receives the degree of "blooming talent," and although he has no claim to position, he is still a man above the common people. If he neglects his studies, he may lose his rank; hence he must be present at the examinations up to his sixtieth year. Thousands of men of this degree become school-teachers, doctors, letter-writers, advocates, etc. The examinations for the second degree are held every three years, in the capital of each province, by two imperial examiners from Peking. The average number of applicants is twenty thousand, of whom about two hundred pass. Besides the imperial examiners from Peking, about sixty-five literary officers and a multitude of servants assist. When the candidates enter the apartment, they are searched for books and papers which might give them an unfair advantage; they then receive the work, and are shut up in cells of about 12 sq. ft., and high enough to admit of their standing. The examination hall contains about 7,500 of these, arranged around open courts; these are paraded by soldiers to prevent any communication between the candidates or with the outer world. The examination consists chiefly in the writing of themes, and is intended to last nine days and three nights. When the work is done, it is examined first by a subordinate commission, to see if the formalities have all been observed. No essay may have more than seven hundred signs, nor less than one hundred; and correction is in no case allowed. The work is afterward laid before the imperial examiners, who give the final judgment. It is considered an honor to attempt this examination, and failure is never looked upon as a disgrace. The licentiate is entitled to a position after some years, and has the right to hoist a flag before his house. The examination for the degree of doctor is held every three years at Peking, and only licentiates are allowed to undergo it. This examination is the same as that for the degree of licentiate, except that the examiners are of higher rank. The names of the successful candidates are entered upon the civil service list, and they receive the first vacant position. The examination for membership of the imperial academy takes place every three years at the imperial palace; this degree is equivalent to an office, since the members of the academy are maintained by the state.

Contact with European nations is gradually breaking down the popular estimate of the *Classics*, and gradually European education is being introduced. In 1866, a mechanical workshop was opened in Shanghai, in which the imperial officers were commanded to study. In 1867, a polytechnic school was opened in the sea province Fu-tschien, for the instruction, by foreign teachers, of talented young Chinamen in machinery. In 1868, a university was opened at Peking; where the instruction was afterward on the European plan. This caused a good deal of excitement among the conservatives, but all to no avail. A great observatory has been built for the university, and many costly instruments obtained from Europe. The student in the university must (1) have taken a course in the classics; (2) he must live in the university building, and be present from morning until evening; (3) he has to pass a monthly and semi-annual examination; (4) after three years he has to pass an examination for dismissal; (5) he receives board and lodging free, and about $15 a month pocket money. Those who pass the final examination are viewed as belonging to the higher classes of learned men. Besides scientific instruction, the "six fine arts" are also taught: (1) Society manners, (2) Music, (3) Archery, (4) Carriage driving, (5) Writing, (6) Reckoning. Prince Kung, who was the chief mover in founding the university, complained bitterly of the decay of mathematics and astronomy, owing to a monopoly of the mandarins, who had procured a law forbidding any one to study astronomy under heavy penalties. He viewed it as the greatest glory of the dynasty to have restored to his father-land the mathematical and astronomical studies, and whatever the Europeans have built upon them, as an old property of the nation. In this way he justified to the jealous Chinamen the introduction of foreign teachers and foreign inventions. The Roman Catholic Church, which had, in 1872, in China proper, 26 vicariates apostolic, and 3 prefectures apostolic, and, in the Chinese dependencies, 3 vicariates, with a Catholic population of about 400,000, supports a large number of schools, some of which are of a high grade. The number of native priests is considerable; and most of them receive a European education in the propaganda at Rome, and in a Chinese missionary seminary at Naples. The Protestants, who have formed native congregations in the treaty ports, with an aggregate membership (in 1869) of 5,624, have also some schools, and make considerable progress in circulating the Bible. In 1872, the Chinese government sent 30 students to the United States, and 30 more were to come each year for the succeeding four years; in all 150.—See Schmidt, *Geschichte der Pädagogik;* Courcy, *L'Empire du Milieu* (Paris, 1867); Davis, *Description of China and its Inhabitants* (2 vols., London, 1857); Gützlaff, *China Opened* (2 vols., London, 1838); Hanspach, *Reports, for the Years* 1863 *and* 1864, *of the Chinese Vernacular Schools* (Hongkong, 1865); Huc, *L'Empire Chinois* (2 vols., 4th edit., Paris, 1862); Williams, *The Middle Kingdom* (N. Y., 1848).

CHRIST CROSS ROW, or **Criss Cross Row,** a familiar designation formerly applied to the first line, or row, of the alphabet, as arranged in the old horn-books, or primers. In these books, which consisted of only a single page, the letters were printed in the following manner:

+ A a b c d e f g h i j k l m n o p q
r ſ s t u v w x y z etc. a e i o u
A B C D E F G H I J K L M N O P Q
R S T U V W X Y Z.

The first line commencing with a cross was called the *Christ cross row*, or briefly the *cross row*. The term was, however, frequently applied to the whole alphabet. Thus, we read in Dove's *Polydoron* (1631), "Of all the letters in the *cross row* a *w* is the worst." "The cross was placed at the beginning," says Johnson, "to show that the end of learning is piety."

This term is often referred to by the old writers. In Shakspeare's *Richard III.*, allusion is made to it by Clarence when he says of the king:

> "He hearkens after prophecies and dreams,
> And from the *cross row* plucks the letter G."

Cotgrave mentions "*La croix de par Dieu*, or *La croix de Jésus*, the *Christ's-crosse-rowe*, or *horne-booke*, wherein a child learns it." In *Specimens of West Country Dialect*, we find the following words, used by one who is teaching the alphabet:

> "Ston still there, and mind what I da zà to ye, and whaur I do point. Now; criss-cross, girt á, little á, b, c, d. That's right, Billy; you'll zoon lorn the criss-cross lain."

In the autobiography of John Britton, born in 1771, in Wiltshire, England, the following passage occurs: "I learnt the Christ-cross-row from a horn-book, on which were the alphabet in large and small letters and the nine figures in Roman and Arabic numerals. The horn-book is now a rarity."—See Timbs, *School Days;* Barnard's *Journal of Education*, vol. XII, art. *A-B-C-Books and Primers.* (See also Horn-Book, and Primer.)

CHRISTIAN BROTHERS, College of the, at St. Louis, Missouri, was established by Roman Catholics in 1855. It comprises a preparatory and a collegiate department, and has a library of 15,000 volumes. Its buildings, grounds, etc., are valued at $150,000. In 1873—4, there were 30 instructors, 270 preparatory and 34 collegiate students. The Rev. Brother James is (1876) the president.

CHRISTIAN BROTHERS' COLLEGE, at Memphis, Tennessee, was opened in 1871. It is a Roman Catholic institution, having a collegiate, a scientific, a commercial, and a preparatory department. The college possesses valuable philosophical apparatus and a library of about 1,500 volumes. The value of the college property is $40,000. In 1874—5, there were 9 instructors and 127 students, of whom 48 were of a collegiate grade. Brother Maurelian is (1876) the president.

CHRISTIAN COLLEGE, at Monmouth, Oregon, is under the control of the *Christians.* It was formerly known as Monmouth University, but was chartered under its present name in 1865. The value of its buildings and other property is estimated at $20,000; the amount of its productive funds is about the same. The college has two separate courses of study, the classical and the scientific; and there is also a preparatory course. Both sexes are admitted. A student may receive a certificate of graduation in any of the following departments: (1) sacred history, mental and moral sciences; (2) natural science; (3) mathematics; (4) classics. To obtain such certificate it is required that the candidate should have been a student of Christian College at least one year, and that he should pass a satisfactory examination in all the prescribed studies of the department. In 1873—4, there were 9 instructors and 180 students. T. F. Campbell, A. M., is (1876) the president.

CHRISTIAN UNIVERSITY, at Canton, Missouri, was chartered in 1853, and organized in 1856. It was founded by the Christian denomination for the education of both sexes. Its buildings, grounds, etc., are valued at $100,000. In 1872—3 it had 8 instructors and 166 students. W. H. Hopon, A.M., is (1876) the president.

CHRISTIANS (sometimes, but improperly, pronounced Christ-ians), Christian Denomination, Christian Connection, and Christian Church, are names chosen, in the United States, by organizations of Christians who "seek to unite the followers of Christ of every persuasion, by the breaking down of party walls, party spirit, and sectarian feeling and practice, and by infusing into the minds and hearts of all lovers of the common Saviour a liberal spirit, thereby inducing liberal practice." (See Wellons, *Annual of the Christian Church for* 1875, Suffolk, Va., 1875.) They have no rule of faith and practice, save the Holy Scriptures, and the only test of fellowship agreed upon is Christian character. They believe that the right of private judgment and entire liberty of conscience, in reference to those points of doctrine and practice not considered essential to salvation, should be accorded to, and enjoyed by, all; and that, therefore, all who believe in, and love and serve, the Lord Jesus Christ, ought to be received into the fellowship and communion of the Church. They are generally Antitrinitarians and Baptists; they cherish prayer meetings, Sunday schools, and missionary enterprises, and are congregational in church government, holding annual and state conferences, and a quadrennial general convention. The first organization of the kind was effected, and the name *Christians*, to the exclusion of all other names, adopted, through the influence of Rev. J. O'Kelly, in a conference held in Surry County, Va., Aug. 4., 1794. The new organization consisted of seceders from the Methodist Episcopal Church. A similar organization was established, a few years later, by seceders from the regular Baptists, in the New England States; and a third in 1804, in Kentucky and Tennessee, by a number of Presbyterians. Soon after, the three bodies met in general convention and were consolidated into one denomination. The war interrupted the connection of the Southern with the Northern conferences, and the former organized a Southern general convention, which held its first session in 1866, and the fourth in 1874. The main body had, in 1875, 1197 ordained and 210 unordained ministers, and 69,701 members. The Southern branch had, in the same year, 6 conferences, 57 elders, 12 licentiates, and about 10,000 members.

The main branch, according to the almanac published by the denominational publishing house at Dayton, Ohio (*The Christian Almanac for* 1876), had, in 1875, the following educational institutions: Union Christian College, at Merom, Sullivan County, Indiana; Starkey Seminary at Eddytown, Yates County, N. Y.; Proctor Academy, Andover, N. H., and the Christian Biblical Institute, at Stanfordville, Dutchess County, N. Y. The latter institution was formerly situated at Eddytown, N. Y., and was, in 1872, removed to Stanfordville, where sixty acres of land had been bought for it, at a cost of $18,000. The Institute building and a student's home had been erected by the Hon. David Clark, of Hartford, Ct., at a cost stated to have been between $20,000 and $30,000, and were presented to the convention as his free gift. It offers free tuition to worthy young men and women; also the free use of class-books and library, and to students without families the free occupancy of a lodging and study-room in the Students' Home. The Southern branch controls the Suffolk Collegiate Institute, at Suffolk, Va., and the Graham High School, at Graham, N. C.

CHRIST'S HOSPITAL, or The Blue-Coat School, one of the most famous charitable institutions of London, incorporated by Edward VI., in 1553, as a hospital for orphans and foundlings. It derives its name, Blue-Coat School, from the costume of the boys, which has continued from its foundation. This consists of a blue woolen gown or coat with a red leathern girdle, yellow breeches and stockings, and a black worsted cap. Charles II. founded a mathematical school in the hospital, in 1672, the students of which are called King's boys. The age of admission is between seven and fifteen. except for the King's boys and the "Grecians," or boys of the highest class, of whom eight are annually sent to Oxford and Cambridge. The government of the institution is vested in the lord-mayor and aldermen of London, and those who have contributed to the institution the sum of £400. The total income of the hospital is about £50,000. The old buildings, which were destroyed in the great fire of 1666, were replaced by others erected under the direction of Sir Christopher Wren. The present edifices were erected in 1825. It has ceased to be a charitable institution, and is now essentially a classical school. Latin and Greek form the basis of its course of study, but all the elementary branches, including drawing, the modern languages, etc., are also taught. In 1683, a preparatory school was built at Hertford, in which the hospital children are nursed and instructed till they are old enough to enter the school. The girls remain permanently here. Many illustrious names are found in the list of its graduates, among whom may be mentioned, Camden, the historian, Bishop Stillingfleet, Richardson, the novelist, Coleridge, Lamb, and Leigh Hunt.

CHRONOLOGY. See History.

CHURCH OF GOD, a denomination of Baptists in the United States, organized in 1830 by the Rev. Mr. Winebrenner, formerly a minister of the German Reformed Church. The peculiar name was adopted as being the most scriptural. Besides baptism and the Lord's Supper, they hold feet-washing to be a positive ordinance of perpetual standing in the church, and obligatory on all Christians. In church government, this denomination is Presbyterian. A number of congregations form an *eldership*, which meets annually. The General Eldership, consisting of delegates from annual elderships, meets triennially. There were, in 1875, 13 elderships, about 400 churches, and about 25,000 members. Several efforts were made, between 1854 and 1866, to establish a denominational school, but they all failed. In 1872, the General Eldership was visited by a delegate from the general conference of the Free Will Baptists (who, like the Church of God, are Arminian in theology), who proposed on behalf of that body, that the Church of God should take an interest in Hillsdale College, a denominational school of the Free Will Baptists at Hillsdale, Michigan, by endowing a professorship and designating a professor. The offer was accepted, a professor chosen, and a visiting committee to the college appointed. The chair was to be endowed by the sale of scholarships. At the next General Eldership, in 1875, the board of education were, however, compelled to report that the effort to raise an endowment fund of $10,000, had failed, no more than $200 having been obtained. In accordance with the request, the board of education was relieved from the charge of completing the arrangement with the authorities of Hillsdale College. At the same time, it was resolved to form a chartered or incorporated society to take charge of the educational interests of the church, and similar societies in all the annual elderships.

CINCINNATI, the metropolis of the state of Ohio, having a population, in 1870, of 216,239.

Educational History.—The first effort made in behalf of education was that of John Kidd, who, in 1818, devised $1,000 per annum, chargeable upon the "ground rents of his estate," to be expended for the education of the poor children of the city. His title to his estate, however, proving defective, his devise failed. The next bequest was that of Thomas Hughes, who, in 1824, left a tract of land the perpetual rent of which, amounting to $2,000, was to be applied to the same purpose. The following year, the legislature passed a general law applicable to the state, but making no special provision for education in the cities. Owing to inherent defects, however, this law became inoperative; and, in 1830, the city's representatives in the state legislature procured the passage of a law by which an independent organization was given to the schools of Cincinnati. This provided for the appointment of a board of trustees and visitors, and directed the council to divide the city into ten districts, in each of which they were required, within ten years, to purchase a lot on which a building of brick or stone, two stories high, and containing two school rooms, should be erected; the cost of which was to be defrayed by taxation. Much opposition was encountered, however, by the trustees in carrying out these provisions, the objection, on the part of the people, to taxes levied for such a purpose being very strong. Want of means, and the unfriendliness of the city council, also, produced such delay, and the accommodations provided for the pupils were so insufficient, that the sympathy of the people was in danger of permanent estrangement from the cause of the schools. At this juncture, the friends of education resolved to place the benefits derived from the schools before the people. Annual examinations of the pupils were publicly held, to which eminent men, members of the press, and teachers from other states, were invited; and these were followed by imposing street parades of the school children, which were continued for several years. The result was a hearty endorsement of the public schools by the people, so that, in 1833, a model school-house was built, and, in 1834 and 1835, eight public-school houses were erected — the whole at an expense of $96,159.44, which was met by the issue of city bonds. The cause was furthered still more by the establishment, about this time, of the Western College of Teachers, and the opening of the Woodward High School, which offered to receive annually, for gratuitous instruction, ten boys to be selected by the school board from the common schools. In 1837, the constitution of the school board was changed so as to consist of two members, instead of one, from each ward. In 1839, schools were established in orphan asylums; in 1840, the German language was introduced into the common schools; and, in 1842, night schools were opened. The harmony of the schools was disturbed, in 1842, by a violent discussion in regard to the use of the Bible in the schools, which has been carried on with great acrimony, at intervals, ever since. The Central High School, with a graded course, was established in 1847; the Woodward High School and the Hughes High School, in 1851. In 1852, the Woodward and the Hughes funds were merged in the city-school fund, the whole being managed by a union board. In 1849, colored schools were established by law, and the study of the German language was authorized in some of the district schools. The organization of intermediate schools was begun in 1854, the object being the consolidation of pupils in such a manner that fewer teachers would be needed. In 1857, the first normal school was opened, the number of teachers at that time being 300. In 1869, the Bible question was again discussed, and, in the legal struggle which resulted, it was excluded from the schools. In May, 1873, the legislature passed an act for the re-organization and maintenance of common schools, which is substantially the present law of the city.—The *supervision* of the schools was first provided for in 1850, the first general superintendent being Nathan Guilford, who was elected by popular vote. He served two years, and was succeeded by Dr. Merrell, who resigned shortly after. In 1853, the law was changed, and the annual appointment of a superintendent by the board was ordered, A. J. Rickoff being the first incumbent of the office under the new law; he was succeeded, in 1866, by John Hancock, and, in 1874, by Jno. B. Peaslee.

School System.—The system, at present (1876), comprises 26 district, 4 intermediate, and 2 high schools, for whites; and 4 district schools, one intermediate, and one high school, for colored persons; in addition to which, there are intermediate departments in 10 of the district schools. There are, also, 10 district night schools, and one evening high school. The legal school age is from 6 to 21 years. Three *courses of study* have been adopted by the union board of high schools, denominated the classical, the technological, and the general; the first two intended as preparatory to kindred courses in the university, the last, for pupils whose education ends in the high school. The fund for the support of the schools is derived from a special three-mill tax on property, the state tax, the income of the Woodward and Hughes funds, tuition fees paid by non-residents, etc.

The chief items of *school statistics* are:

No. of children of school age	76,477
" " " enrolled in public schools	28,999
" " " in average daily attendance	21,929
" " " attending private schools	16,454
" " " " night schools	3,279
No. of teachers in public schools	545
Receipts (1876)	$695,000
Expenditures (1876)	$691,700

Many other educational institutions exist in Cincinnati. The Catholic parochial schools educate, it is estimated, about 17,000 children; and different religious orders, male and female, annually educate many children and young ladies in denominational and conventual schools. The University of Cincinnati, which is liberally endowed, took possession of its new building in 1875, and is now in active operation.

CINCINNATI, University of, in Cincinnati, Ohio, was organized under the act passed by the general assembly of Ohio, April 16., 1870, "to enable cities of the first class to aid and promote education." It consists of three departments: the Academic, or Department of Literature and Science; the School of Design; and the Observatory. It is to be maintained by any funds either heretofore or hereafter given to the city, for the purpose of founding or aiding an institution for promoting free education. The statute also authorizes any persons or bodies corporate, holding any estate or funds in trust for the promotion of education or any of the arts or sciences, to transfer the same to the city as a trustee for such purpose, thus affording a means of consolidating the various funds now existing, which separately are of little or no avail for their intended purpose. The same statute, furthermore, authorizes an annual tax, by the city, of one-tenth of a mill, for the support of such institutions. The endowment of the University of Cincinnati consisted, in 1876, of the estate devised to the city by the late Charles McMicken, in 1857, the annual tax of one-tenth of a mill, and donations for special purposes, amounting, in the aggregate, to $125,000. The donation of the old observatory property, on Mt. Adams, is upon the condition that the city shall maintain an observatory in connection with the university, and was accepted by the city council accordingly.

The institution is managed by a board of directors, consisting of the mayor *ex officio* and 18 members, appointed by the common council. It is open to both sexes. The receipts, in 1875, amounted to $119,748.92; the expenditures were $108,806.84, including $54,683.28 for building purposes. The academic department was opened in 1873. Three courses, of four years each, have already been established; namely, (1) The Classical Course; (2) The Scientific Course; (3) The Course in Civil Engineering. Besides these regular courses, provision is made for students desiring to pursue particular branches exclusively. The work during the first year is rigidly prescribed; but, after that, a large amount of option is allowed, except in the civil engineering course. Candidates for the degree of B. A. or B. S. must choose at least one principal study in which to take a full course of three or four years. For the former, this may be either ancient languages, modern languages, or some other literary branch; for the latter, chemistry and physics, natural history, geology, mathematics, astronomy, or some other science. The remainder of the elective time may be devoted to other full or partial courses. Instruction is free to all who are *bona fide* residents of Cincinnati; but tuition fees are charged to non-residents. The course pursued in the city high schools constitutes the requirements for admission.

The north wing of the university building was completed, and occupied by this department, in October, 1875. In 1876, there were 10 instructors and 51 students. H. T. Eddy, C. E., Ph. D., is (1876) dean of the faculty. The *School of Design* was established in connection with the Ohio Mechanics' Institute in 1863, but they are now entirely separate. This school occupies rooms in the Cincinnati College building; and there are day and evening sessions. It is designed especially for residents of Cincinnati, but others may be admitted. The full course is for four years. In 1876, there were 6 instructors and 402 students, of whom 242 were in the classes in drawing and design, 133 in wood-carving, and 27 in modeling. The *Observatory* was established about 1844. The new site is on Mt. Lookout, 6 m. from the city, one of the highest points in Hamilton County. Besides an astronomical library, it is supplied with first class instruments, among them the Mitchel refractor of 12 inches aperture. It is (1876) under the direction of Ormond Stone, A. M.

CIVIL GOVERNMENT. See SCIENCE OF GOVERNMENT.

CLAFLIN UNIVERSITY, at Orangeburg, South Carolina, under the auspices of the Methodist Episcopal Church, was chartered in 1869, and opened in 1870. It was established primarily for the education of colored youth of both sexes, but no one is excluded on account of race, color, or religious opinions. The buildings, grounds, etc., are valued at $40,000. In 1872, the state established its agricultural college and mechanics' institute in connection with the university. Three departments are now in operation, namely: a common English department, a classical preparatory and higher English department, and an agricultural and scientific department. In 1874—5, there were 5 instructors and 188 students, of whom 151 were in the common English department, 37 in the higher English, and 65 in the scientific and agricultural department. The agricultural college and mechanics' institute has a productive endowment of $180,000. The Baker Theological Institute is connected with the university. The Rev. Edward Cooke, D. D., is (1876) the president.

CLASS (Lat. *classis*, from Gr. *κλᾶσις*, from *καλεῖν*, to call, because applied to an assembly of the people when called together), a number of pupils or students in a school or college, of the same grade of attainments, receiving the same instruction, and pursuing the same studies. When large numbers of pupils are to be taught, a careful distribution of them into classes becomes requisite; indeed, nothing is so important, previous to the work of instruction, as an accurate classification. Heterogeneous masses of children cannot be instructed simultaneously. They may be made to perform mechanically certain school exercises,—may, perhaps, be taught to read, to spell, to write, and to cipher to some extent; but it can only be by rote, without the due exercise of their intelligence, and, hence, without proper mental development. A poorly classified school can never be really efficient, whatever talent in teaching may be brought to bear upon it. There is no doubt that individual teaching has many advantages over the teaching of classes; since there is a better opportunity to observe the pupils' peculiar traits of character, and to adapt the instruction to them; but class teaching approximates to individual teaching in proportion as the classification is so accurate as to bring together under the influence of the teacher pupils of a like grade of attainments, and of similar disposition, temperament, and mental constitution. Of course, such a degree of accuracy in classification is ordinarily impossible; but this is the ideal standard to which the teacher should always endeavor to approximate in organizing the classes of his school.

A proper limit as to the size of classes should be carefully observed. This is difficult to fix by the statement of any particular number, since the number of pupils that may be properly placed under the instruction of a single teacher will vary with the age and character of the pupils, the evenness of the grade, and the skill and experience of the teacher himself. When the number is between 50 and 100, or over, as it sometimes is in the large city schools, of course no proper result can be effected. "In a large class," says Reid (*Principles of Education*), "each of whom seldom, and at best only for a short time, receives individually any attention from the teacher, the progress is slow, the faculties little developed, and the education altogether very imperfect." The danger inseparably connected with the indiscriminate treatment of pupils of different characteristics has been often referred to by experienced educators. Thus, we find in a work designed to aid practical teachers, the following important admonitions: "In every class, however well graded, the pupils will differ much in age, health, mental capacity, and home advantages. A correct and judicious classification will reduce this inequality to a minimum; but there will still remain a wide field for the exercise of discrimination, care, and caution on the part of the class-teacher. The lessons should, in all respects, be adapted to the average ability of the pupils of the class; but, even beyond this, some allowance will often have to be made in the case of pupils of quite inferior mental capacity or opportunities for home studies;" and further, "Teachers are especially admonished to be considerate toward pupils of a delicate constitution, an over-excitable brain and nervous system, or in temporary ill health. Many children of this class are precocious in mental activity and exceedingly ambitious to excel; and the greatest care is required to prevent them from injuring themselves by an inordinate devotion to books and study." (See *How to Teach*, N. Y., 1873.) The comparative advantages and disadvantages of home (individual) instruction, and school (class) instruction are quite fully discussed in Isaac Taylor's *Home Education*. "A principal and necessary distinction," he remarks, "between the two systems is this, that while, in the one, all methods of instruction and modes of training are or may be, with more or less exactness, adapted to the faculties, tastes, and probable destination of the pupils singly, and may be accommodated to the individual ability of each; in the other system, that is to say at school, it is the mass of minds only, or some few general classes, at the best, that can be thought of.... And yet even this undistinguishing mechanism, which is proper to a school, and which carries all before it with a sort of blind force, is in itself, in some respects, a good: and if some are the victims of it, to others it may be beneficial. There are children who are not to be advanced at all, except by the means of a mechanical momentum; and such might well be sent from home to school, on this sole account, that they will then be carried round on the irresistible wheel-work of school order.... But although in a large school, even when broken up into classes, little regard can equitably be paid to individual peculiarities of faculty or taste, the principle which is characteristic of home education, may readily be extended to schools not much exceeding the bounds of a numerous family. In fact, it is only the personal ability of the teacher, his tact, his intelligence, and his assiduity, that can fix the limits within which the principle of adaptation may be made to take effect." The number of pupils that should be placed in a class is, therefore, a matter requiring the utmost exercise of good judgment, taking cognizance of all attending circumstances.

What should constitute the *basis of classification* is also a matter requiring a careful consideration. The several grades of the course of study should, of course, be exactly defined, and all the subjects, or parts of subjects, prescribed, should be carefully adjusted, so that the various requirements of the grade may be accomplished simultaneously, and a due proficiency in each may constitute the basis of distribution or promotion at every reorganization of the classes. Still, let the adjustment be as nice as practicable, some diversity will be found at the end of each period of instruction. One pupil, for example, will have made good progress in arithmetic, but very little in reading, writing, grammar, etc. What, then, is to be done? If the average progress is taken, pupils of such unequal attainments in particular studies may be brought together, that the teacher will find it impossible to give instruction to one portion of the class without neglecting the other, or will be obliged to divide his class into sub-grades, and thus sacrifice much time in attending to each separately. This difficulty is often, measurably, obviated by selecting some one branch of instruction, as arithmetic, and basing the classification upon the pupils' attainments in this subject, working constantly thereafter to bring the pupils, as far as may be necessary, up to the same standard in other subjects.

Whether a school is best taught by classes or by subjects, is a question that has received much attention from educators; that is to say, whether each teacher shall instruct a particular class in all the branches of study which the pupils are required to pursue; or whether each class shall be taught in succession by several teachers, each one taking a particular subject or class of subjects. The diversity of attainments, mental tastes, and special skill among teachers, would seem to dictate the subject system rather than the class system; since, were certain branches assigned as a specialty to each teacher, there would be more time for the careful study by the teacher, not only of the branches themselves, but of the proper methods of teaching them; and, of course, better work would necessarily be done. Other considerations, however, seem partially or wholly to neutralize this apparent advantage. The success of a teacher, especially of young pupils, depends upon his thorough knowledge of their disposition, and also upon their familiarity with his characteristics; and this knowledge it would be difficult to acquire if the teacher were required to spend but a short time with each class, and his means of acquiring it were distributed over a number of classes. Some educators, however, take a view directly opposed to this. "If the pupil," says Wickersham, "recite always to the same teacher, he may become familiar with certain lines of thought, but he will most likely be confined to them. He might be trained by a more unvaried discipline, but it is a discipline in one direction. He becomes imbued with his teacher's peculiar opinions, acquires his manners, and is apt to create a little world in which his teacher is the reigning sovereign and himself the most conspicuous citizen of the realm. It is much better for all pupils to have different teachers, with different tastes, talents, and opinions; but it is very important that this should be the case with advanced pupils." Nevertheless, it has generally been found that much better discipline,—a firmer control, prevails in schools conducted under the class-teaching plan than in those taught on the subject or departmental system; and, consequently, the former is the prevalent mode of organization in large public schools. In district or private schools consisting of but few pupils, and in institutions of a higher grade, as high schools, colleges, and universities, the other system is invariably, and of course necessarily, employed.

Instead of requiring all the members of a class to study the same branches, some schools are so organized that pupils recite different studies in different classes. This method has sometimes been denominated a *loose classification*. It encourages unequal attainments, the pupil being stimulated to do his best in each study without any regard to his progress in other studies. This is, of course, a great disadvantage. Besides, it requires a constant change of classes in the working of the school, and, consequently, makes the discipline more difficult. "I recommend," says Wickersham (*School Economy*), "a close classification, with such departures from it as overruling circumstances may make expedient."—See WELLS, *Graded Schools* (N. Y., 1862); WICKERSHAM, *School Economy* (Phil., 1864); ISAAC TAYLOR, *Home Education* (London and N. Y., 1836); LE VAUX, *Science and Art of Teaching* (Toronto, 1875).

CLASSICAL STUDIES, a term denoting the study of the Latin and Greek languages and literatures. The word *classical* is derived from the Latin word *classicus*, that is, relating to the classes of the Roman people, especially to the first class. The best authors known to the Romans, both Latin and Greek, were rated as *classici*, that is, *of the first class*, or *classics*. The expression is sometimes used to designate the standard authors of any nation, but it is chiefly applied, as it was originally, to the standard Latin and Greek writers.

The study of Latin and Greek occupies a very prominent part in the educational history of the Christian and civilized world, and still constitutes a principal branch of instruction in institutions of the middle and higher grades. The Romanic countries, Italy, Spain, Portugal, and France, in which new languages gradually and slowly arose out of a mixture of the Latin and the native languages, naturally retained the Latin as their exclusive literary language. In the Germanic world, a knowledge of Latin was no less indispensable, on account of the connection of the churches with the see of Rome. The Sacred Scriptures, and the ecclesiastical literature in general, were only accessible in Latin; and, as none of the native languages had a literature, Latin was the only key to the scanty amount of information which, at that time, was attainable. In the cathedral, collegiate, and convent schools of the middle ages, Latin was not only a subject of study, but also the vehicle of instruction. Charlemagne, in the schools founded by him, promoted the study not only of Latin, but also of Greek. His example, however, found little imitation; and, until the end of the fourteenth century, Greek was taught in but few of the schools of western Europe, and even the knowledge of Latin was quite rare. Though it was the official language of the Church, the acquaintance of the great majority of priests with it appears to have been very imperfect. The growing opposition to scholasticism awakened a new interest in the Latin classics; and, from the beginning of the fourteenth century, when the learned Byzantine Emmanuel Chrysoloras taught Greek in Italy, the study of the Greek language and literature spread throughout western Europe. The Reformation, while it favored the use of the native languages in preference to the Latin, for divine worship, encouraged the study of the Latin classics in opposition to the writings of the representatives of mediæval scholasticism. At the same time, a great impulse was given to the study of Greek, since the Protestant churches urged a thorough study of the Greek Testament, in preference to the Vulgate. In the Protestant as well as in the Roman Catholic countries, the Latin remained the usual medium of literary productions, and thus Latin classics continued to be a very important agent in the education of the European nations. The increasing interest in the natural sciences, and the spread of utilitarian tendencies, which found a distinguished representative in the *Philanthropin*, led, in the second half of the eighteenth century, to a considerable restriction of Latin, in all schools of a lower grade, and to a fierce controversy in regard to the propriety of classical studies, in general, in the course of instruction prescribed for schools of a higher grade. This controversy is not yet ended; and the relative importance of these studies, as compared with other subjects of instruction, is still greatly disputed. The opposition to the prominence which was formerly accorded to classical studies in colleges, gymnasiums, and similar schools, has been so far successful, that the course of instruction in all schools of this grade, now embraces subjects formerly excluded; and, moreover, institutions of a higher grade have been organized, in which classical studies are either entirely excluded, or reduced to a secondary or auxiliary position. A large number of American colleges and universities have arranged, in addition to the full classical course, a scientific course, from which Greek is always and Latin generally excluded; and the large patronage which this arrangement has attracted presents, of course, a very strong inducement for all colleges to yield to what appears to be a general demand. In Germany, a sharp controversy is still pending on the question whether the state government should confer upon the real schools in which either Greek or classical studies, in general, are excluded, the right of conferring certificates of maturity for the university. On the part of those who demand that classical studies should be retained as a prominent and essential part of a higher education, it is argued that the organic structure of the Latin and Greek languages is more nearly perfect than that of any other language, and that, by the great diversity of their inflections, they express more fully and exactly all the various and minute modifications of thought. The fact that they are no longer living languages, is urged as an advantage; because, being complete organisms, they afford a better means of mental discipline than the modern languages, which are continually undergoing important changes. The mutual relation of the two classical languages is represented as such that they supplement each other, the Latin being more artistic, rhetorical, and pathetic; while the Greek bears, to a greater extent, the impress of naturalness, refinement, and freedom. The literatures of Rome and Greece are regarded as no less indispensable than their languages. Translations, it is claimed, will never succeed in reproducing all the excellencies of a literary masterpiece; and the standard works of classic literature are models of such perfection, that, like the ancient works of plastic art, they are sure to remain for all time the instrumentality for teaching those who aspire to a higher education. There is no country, in either Europe or America, which, for its intellectual development, has not leaned on the pillars of the Latin and Greek classics, and a normal and continuous growth of our modern literatures is not conceivable, without an uninterrupted connection with the chief sources of our intellectual life. This connection is necessary for all branches of science; for some, as theology, philosophy, philology, law, and medicine, it will obviously appear so indispensable that no student of any of these sciences will ever think of disputing it.

John Stuart Mill, in an address delivered in the university of St. Andrews, on his inauguration as rector, strongly expressed his preference for classical studies as compared with modern languages. "The only languages," he says, "and the only literature to which I would allow a place in the regular curriculum, are those of the Greeks and the Romans, and to these I would preserve the position in it which they at present occupy." The superiority of the Latin and Greek languages over any other, ancient or modern, is thus explained by Mr. Mill: "The principles and rules of grammar are the means by which the forms of language are made to correspond with the universal forms of thought. The distinctions between the various parts of speech, between the cases of nouns, the moods and tenses of verbs, the functions of particles, are distinctions in thought, not merely in words. Single nouns and verbs express objects and events, many of which can be cognized by the senses; but the modes of putting nouns and verbs together, express the relations of objects and events which can be cognized only by the intellect; and each different mode corresponds to a different relation. The structure of every sentence is a lesson in logic. The various rules of syntax oblige us to distinguish between the subject and predicate of a proposition, between the agent, the action, and the thing acted upon; to mark when an idea is intended to modify or qualify, or merely to unite with some other idea; what assertions are categorical, what only conditional; whether the intention is to express similarity or contrast, to make a plurality of assertions conjunctively or disjunctively; what portions of a sentence, though grammatically complete with themselves, are mere members or subordinate parts of the assertion made by the entire sentence. Such things form the subject-matter of universal grammar; and the languages which teach it best are those which have the most definite rules, and which provide distinct forms for the greatest number of distinctions in thought—so that if we fail to attend precisely and accurately to any of these, we cannot avoid committing a solecism in language. In these qualities, the classical languages have an incomparable superiority over every modern language, and over all languages, dead or living, which have a literature worth being generally studied." Mr. Mill also claims that "the pre-eminence of the ancients in purely literary excellence—in perfection of form—is not disputed, that their composition, like their sculpture, has been to the greatest artists an example, to be looked up to with hopeless admiration, but of an inappreciable value, as a light on high, guiding their own endeavor."

The Hon. William E. Gladstone, who as a classical scholar has few, if any, equals among the great statesmen of the nineteenth century, strongly maintains the hereditary claims of classical studies to a prominent position in a modern curriculum for secondary and superior schools. He denies the right of natural science, modern languages, modern history, or other studies, to a parallel or equal position. "Their true position," he says, "is ancillary, and as ancillary it ought to be limited or restrained, without scruple, as much as a regard to the paramount matter of education may dictate.... The modern European civilization, from the middle ages downwards, is the compound of two great factors, the Christian religion for the spirit of man, and the Greek (and in a secondary degree the Roman) discipline for his mind and intellect. St. Paul is the apostle of the Gentiles, and is, in his own person, a symbol of this great wedding. The place, for example, of Aristotle and Plato in Christian education is not arbitrary, nor in principle mutable. The materials of what we call classical training were prepared in order that it might become not a mere adjunct, but (in mathematical phrase) the complement of Christianity in its application to the culture of the human being, as a being formed both for this world and the world to come."

In the conflict between the advocates of classical studies in our higher schools and their opponents, the former generally take the ground that Latin and Greek, both the languages and the literatures, supplement each other. Where a comparison between the two is made, the preference is generally given to the Latin, partly because the knowledge of Latin grammar is supposed to be of superior utility, and partly with a view to the fact, that Latin is not only the key to an understanding of the Latin classics, but, for a long period, has been the universal language of Christendom; and also because the Latin works, since the restoration of letters, are in themselves of considerable value for the knowledge of every kind which they afford, even to this day, many valuable works being published in that language. The Greek language, too, is by no means without its champions; and, though none of them would venture to disparage the study of Latin, they regard the Greek as the superior representative of classic antiquity. (See LATIN, and GREEK.)

The method of teaching and studying the classical languages and literatures must, of course, vary according to the object or purpose for which they are taught or studied. In some schools, the study of these languages (particularly Latin) has been adopted for the sole or chief purpose of showing their relation to the English language, and of giving a clear insight into the meaning of English words derived from them. Where this is the exclusive object, a comparatively small amount of time will be found sufficient for this study. In classical schools, colleges, gymnasia, etc., classical studies are generally pursued for the purpose of cultivating and developing the mental faculties, and introducing the student to the literary treasures of which they are the keys. It is obviously of the greatest importance, that the teacher should be fully conscious of the precise aim that is to be attained, and that the pupils themselves should, as soon as possible, be made to understand the objects and advantages of the study. The first reading exercises will, of course, serve chiefly to familiarize the pupil with the grammatical rules; but, as soon as he understands the peculiar structure of the language, the teacher should strive to unveil, as much as possible, what is beautiful and excellent in the classic authors selected for study. Both translation and explanation should aim not only at increasing a knowledge of the vocabulary and the grammar, but at the training of the mind to comprehend, to appreciate, and to admire these beauties and excellencies. The finer parts of a classic author will, of course, require the greatest and most concentrated attention of the pupil; and, therefore, the greatest possible exclusion of mere grammatical explanations. It is evident that none but teachers of the best skill and attainments are competent to give this kind of instruction. The college graduate who has just completed his course, however well he may have been taught, cannot be expected to make the impression, and accomplish the success, by his teaching, which can only spring from a professor of ripe scholarship, cultivated taste, and experience in giving instruction. There is no doubt that classical studies have suffered in repute as the agencies of a higher education, by the mechanical methods employed by teachers. The letter, and not the spirit, has been taught; and the consequence has been, that the perusal of the sublimest masterpieces of ancient history, oratory, and poetry has commonly degenerated into the study of petty grammatical subtleties, only puzzling the mind of the student without informing or elevating it. Next in importance to the employment of competent teachers, is the selection of proper text-books, in order to produce the best results in this department of instruction. The books at first needed by every pupil are a grammar, a dictionary, and books for translation. The grammars and dictionaries used should be those specially prepared for pupils; for the wants of pupils are different from those of teachers and scholars. As regards the editions of classic authors, some teachers prefer texts with notes, others those without notes. In the former case, the notes should be exclusively calculated to promote the pupil's knowledge of the language and a clear understanding of the writer's meaning. The use of translations is generally discouraged by teachers; though all know, that "ponies" are great favorites with students. There are some educators who regard a judicious use of translations as not only not hurtful, but commendable. When a knowledge not only of the classic language, but also of its literature is desired, the use of the entire work of an author is preferable to that of selections, such as are found in reading-books. An introduction, giving the pupil information in regard to the author of the work, facilitates a correct understanding of the work itself, and increases the pupil's interest. Geographical and historical explanations should be given wherever they are needed. The translations should be at first literal, but should, invariably, be converted into good English, and should reproduce, as much as possible, the excellencies, as well as interpret the meaning, of the original. Of course, the pupil should not be discouraged by too harsh and minute a criticism of his efforts. Minor faults should, at first, be passed over, and the pupil's mind gradually trained to facility, accuracy, and elegance of expression.

See H. Barnard, *Studies and Conduct* (Hartford, 1873), giving the views of Byron, Chatham, Donaldson, De Quincey, Froude, Gladstone, Herschel, Hodgson, Locke, Lowe, Macaulay, Martineau, Mill, Milton, Niebuhr, Southey, Temple, Tyndall, Vaughan, and Whewell, respecting classical studies; Hodgson, *Classical Instruction: Its Use and Abuse* (London, 1854); J. W. Donaldson, *Classical Scholarship and Classical Learning* (London, 1856); R. Rauchenstein, *Die Zeitgemässheit der alten Sprachen in unsern Gymnasien* (Aarau, 1850); Beneke, *Erziehungs- und Unterrichtslehre*, 2d vol. (3d edit., Berlin, 1864); Thaulow, *Gymnasial-Pädagogik* (Kiel, 1858); Laas, *Gymnasium und Realschule* (Berlin, 1875).

CLASSICS, CHRISTIAN, or **Christian Greek and Latin Writers.** The ideas and life of pagan Greece had been expressed and beautified, and the growth of pagan genius had ceased in Greece before the coming of Christ. The Greek language remained to embody the new ideas of Christianity; the expression of them by Christ and his apostles in the New Testament is the earliest Christian Greek. These ideas rapidly affected all serious thought. A long succession of Christian Greek writers followed, many of admirable eloquence, more of wonderful subtlety and learning,—apologists, preachers, commentators, historians, philosophers, and poets. The Greek language, meantime, was most carefully studied from generation to generation, and changed very slowly.

The center of controlling thought and genius early moved westward. There had been an after-growth of pagan literature at Rome; but, in the second century of our era, Africa became the nurse of genius, and Christianity its inspiration. Minutius Felix, Tertullian, Cyprian, Commodian, Arnobius, Lactantius, and Augustine appeared in rapid succession. The Latin language expanded and strengthened, to express the new ideas and life. An original Roman poetry for the first time appeared, new in its form and thought, and living on the lips of the people. A new mythology of the saints displaced the heathen deities. History was rewritten, philosophy drawn to new and higher applications, Christianity became the religion of the state, and the services of the church, the canon law, and the proceedings of the courts were in Latin throughout the Western world. At the decline and fall of the Roman empire, the mingling of barbarians with Romans changed the spoken dialects of the common people so much that they are called new languages,—Italian, French, Spanish, and the like. But the priests and lawyers and scholars continued to read, write, and speak Latin; and, when learning revived, the book Latin was carefully cultivated. All important works in science or learning were written in it, and also much literature. This practice continued till recent times. Bacon, Milton, and Sir Isaac Newton used it, and critical commentaries on ancient authors are still often written in Latin.

The earliest Christian Latin differed little from the heathen Latin; but, after it ceased to be folk speech, the free use of the living idioms of feeling was gradually lost, and the number and precision of its technical terms immensely increased. The late Latin follows the general rules of ancient Latin grammar more closely than did the ancients themselves, and is probably the most perfect language which ever existed, for the purposes for which it has been cultivated, for precision, brevity, and perspicuity in dealing with its own range of subjects.

The early Christians detested and feared the pagan religion and manners, and the literature in which they are made alluring. The pagan books were often destroyed, and the Christian authors displaced them almost entirely. Through the darkest period of the middle ages, the works of the Christian writers were almost the sole reading, and the study of them and their language, almost the sole learning, of western Europe. At the pagan renaissance, the admirers of the older heathen writers claimed for them the place of honor; and heated contests were waged between the advocates of the Christian and the heathen Latin, which ended in a victory for the heathen, and the establishment of the pagan authors as the text-books for the study of Latin and Greek in the schools of Europe.

The great Christian writers have always been the delight of Christian scholars; and no long period has ever passed without expressions of regret from eminent educators, that the best years of youth should be spent in mastering the details of heathen life, and dwelling on the thoughts of heathen heroes to the exclusion of the Bible and Christian heroes; and it has been yielded to by many, only on account of the training to be derived from the study of the Latin and Greek languages, which were thought to be found only in the heathen books. But Christians also have written Greek and Latin well. All the grammatical forms are preserved, and used in their works according to the rules of our grammars. Whatever is to be gained from an acquaintance with a synthetic language, and from strange modes of expression, may be had from studying them; and, at the same time, the student may imbibe from their perusal the noblest thoughts. The modern science of language has changed the estimate placed on classic periods, and it now teaches the recognition of many admirable languages, and the study of all dialects and periods in their relation to thought and history; and it has been said that no other thought or history is so interesting or so important as that embodied in Christian Greek and Latin, and that these should, therefore, have the place of honor in the linguistic studies of our universities.

The knowledge of Christian Latin especially is necessary to all original researches into the history of modern civilization and of modern philosophy, since the early history of the European nations, their laws, charters, diplomas, and treaties, the councils of the church, and the works of the founders of modern science, are all written in it. It is also essential to original researches into the history of the modern languages; the peculiarities of etymology, syntax, and orthography, are to be explained from the later Latin, for the most part. The history of modern literature, the spirit emerging in the works of the early masters, like Cædmon, Dante, and Milton, is to be understood only by the study of the Latin fathers. From considerations like these, the fitness of these writers to be used as text-books in our schools and colleges, has lately been strongly urged, and attempts are making to introduce them in France and Austria. In the United States, there has always been a considerable use of the *Historia Sacra*, as a Latin book for beginners. Two editions are now published: *Epitome Historiæ Sacræ*, L'Homond (Baltimore); *Historia Sacra* (Phila.). A considerable part of it is also included in Allen and Greenough's *Latin Primer* (Boston). The *New Testament*, in Greek and Latin, is used in several editions prepared for schools; also the *Greek Testament*, by Spencer (New York); and *Greek and Latin*, by Leusden (Phila.). A series of Christian classics in Greek and Latin, prepared with notes, like the common text-books for our schools and colleges, and edited by F. A. March, is also appearing in New York under the name of *The Douglass Series*, Mr. Benjamin Douglass having given a fund to promote the publication, and to establish the study in Lafayette College. The following have appeared: *Latin Hymns*, *Eusebius*, *Athenagoras*, *Tertullian*; *Justin Martyr* is in press, *Augustine* in preparation, and others are to follow. Other books which may be used as text-books, are: *Sanctorum Patrum Opuscula selecta ad usum præsertim studiosorum theologiæ*, H. Hurter (Innspruck), of which 31 volumes had appeared in 1876. Books prepared for the French schools: *Tertullien*, *Augustine*, *Érasme*, *Pères de l'Église Latine*, *Morceaux choisis des Pères Grecs*, *St. Basile*, *Grégoire*, *Chrysostome*, each a few pages with little or no apparatus, but with a translation added. There are stereotyped texts of the *Confessions of St. Augustine*, of the *De Sacerdotio* of *Chrysostom*, by Tauchnitz, (Leipsic); of *Eusebius* and *Josephus* by Teubner (Leipsic). Accessible translations of several authors are in *The Antenicene Fathers*, Edinburgh; Bohn's *Ecclesiastical Series*, London; Rœssler, *Bibliothek der Kirchenväter in Uebersetzungen* (Leipzig, 1776—86); Thalhofer, *Bibliothek der Kirchenväter*, *Auswahl der vorzüglichsten patristischen Werke in deutscher Uebersetzung* (Kempten), of which, up to 1876, 175 parts have appeared. Great *Libraries of the Fathers* are those edited by Gallandi (Venice, 1765—88), and by J. P. Migne (Paris), not yet complete. Of all the most eminent authors there are many editions, commentaries, and other works of elucidation. Students will also find the following works convenient: *Lexicon Manuale ad Scriptores mediæ et infimæ Latinitatis*, by W. H. M. D'Arnis (Paris, 1866); *Greek Lexicon* from 146 B. C. to 1000 A. D., by E. A. Sophocles (Boston, 1870).

CLASSIFICATION. See Class.

CLEVELAND, an important city in Ohio, being the second in the state in population. The number of inhabitants in 1870, was 92,829; in 1876, it was estimated at 140,000.

Educational History.—The general assembly of the state, as early as 1821, provided for the establishment of school-districts, the election of school committees, and the levying of a tax for school purposes; and, in 1825, it made further provision for education. The act of incorporation, in 1836, authorized the city council to provide for the support of common schools, to levy a tax of not more than one mill on the dollar of the assessed valuation of property for the purchase of sites and the building of school-houses, and one mill additional for the support of a school in each of the three wards of the city, for a term of not less than six months in the year. The administration of school affairs was vested in a board, entitled the Board of Managers of Common Schools, appointed by the city council for the term of one year. In 1859, by special legislation, the election of members of the board of education was placed in the hands of the people, one member being elected in each ward, and one half of the wards electing annually. The city council, however, still retained its control of the finances; but it was required to "provide and support such number and grade of schools, in said city, as may be necessary to furnish a good common-school education to all the children residing therein", and to "support two high schools." In 1868, a law was passed removing all restraints on the part of the city council from the board of education, except that the purchase of sites and the erection of school-buildings were made dependent upon the consent of the council. In 1837—8, the number of pupils enrolled in the schools was only 840; and there were only 6 schools. In 1850—51, there were 32 teachers employed; the average attendance in all the schools was 1650; and the number enrolled, 2,304, out of a school population of 6,742. In 1860—61, the school population was 14,625; enrollment, 5,081; average daily attendance, 3,962, with 83 teachers. In 1870—71, the school population had increased to 34,544; enrollment, 13,184; average daily attendance, 8,174, with 188 teachers.—In 1846, a high school for boys was opened by order of the city council; and, in the following year, a department for girls was established in the same school. For two years, the new institution met with much opposition, it being "maintained by some that it was illegal, by others that it was inexpedient", to levy taxes for the support of schools for higher education. The people, however, gave their support to the policy, and the following year, a law was passed authorizing and requiring the city council to "establish and maintain a high school" Since that time, two other high schools have been established—the West High School, in 1864; and the East High School, in 1872.—The *supervision* of the schools was, in 1841, vested in an acting manager of the public schools, who was a member of the board, and its secretary. The office of superintendent of schools was created in 1853, and has been filled as follows: Andrew Freese, 1853—61; Luther M. Oviatt, 1861—3; Anson Smyth, 1863—7; Andrew J. Rickoff, the present incumbent (1876), from 1867. This officer is elected by the board of education for a term of two years. There are, besides, three associate superintendents, one (a female) specially for primary schools.—The chief duties of the superintendent are to supervise the work of instruction in all the schools of the city, visiting the schools as often as possible, noting defects, and recommending measures to remove them; to inspect the school buildings, and report on their condition; and to fix the time and mode of the examination of schools. Candidates for teachers' licenses are examined by a board of six examiners, appointed by the board of education.—The *School System* consists of a normal school, 4 high schools, 19 grammar schools, and 15 primary schools, making a total of 39 schools. These schools receive all children six years of age and upward, without regard to color. There are four *courses of study* prescribed for the high schools: an English course, of 3 years; a German-English course, of 4 years; a Latin-English course, of 4 years; and a classical course, of 4 years. The course of study prescribed for the grammar and primary schools comprises the branches usually taught in common schools, including music, drawing, and the elements of natural science. German is taught in most of the schools (introduced in 1870). All the teachers of the primary and grammar schools, both principals and assistants, are females.

School Statistics.—The following items are reported for the year 1876:

Number of children of school age	46,990
Number of pupils enrolled	20,771
Average daily attendance	14,069
Number of teachers,	326
Receipts (1875)	$497,174.67
Expenditures (1875)	$356,095.24

Besides the public schools, there are private schools and seminaries in considerable number; also German and English schools, and denominational schools, the latter including several Roman Catholic institutions. The Cleveland Female Seminary is an institution for the superior instruction of women, chartered in 1853. St. Mary's Theological Seminary, a Roman Catholic institution, was founded in 1849. The Ohio State and Union Law College, founded in 1856, in 1874, had 4 professors, and a library of 3,000 volumes. The Cleveland Medical College, founded in 1843, had, the same year, 15 instructors, and 92 students; there is also a college, connected with the homœopathic hospital.

CLINIQUE (Gr. *κλίνη*, a couch or bed), a French word used, in medical schools, to denote an examination or treatment of patients by medical or surgical professors in the presence of their pupils, for the purpose of giving practical instruction; hence the term *clinical* instruction or lectures, because originally given or delivered at the bedside of the sick. (See MEDICAL SCHOOLS.)

CLINTON, De Witt, one of the most illustrious of American statesmen, of deserved celebrity, not only on account of his brilliant talents, high culture, and comprehensive views, but for his earnest philanthropy and his zealous efforts in behalf of popular education. He was born at Little Britain, Orange Co., N. Y., March 2., 1769, and died in Albany, Feb. 11., 1828. After graduating at Columbia College, New York, with great distinction, in 1786, he studied law, and was admitted to the bar in 1788. He also entered the field of politics, sustaining the interests and principles of the republican party, of which his uncle, George Clinton, was then the leader in the state of New York. After filling various offices under the latter as governor of the state, he was elected to the legislature, serving successively in the assembly and in the senate, and at the age of 33 was appointed to a seat in the senate of the United States. This he resigned to assume the position of mayor of the city of New York, which he filled, at intervals, for ten years. He also served as lieutenant-governor of the state; and his advocacy of the construction of the Erie and Champlain canals made him so popular, that, in 1816, he was elected governor of the state, virtually by the unanimous voice of the people; and his administration was continued, with the exception of an interval of two years, during a period of twelve years. His wise and comprehensive measures, particularly in behalf of internal improvements and common-school education in the state, gave him a wide popularity and fame; and, in 1825, he participated in a grand popular celebration on the occasion of the completion of his greatest measure,—the establishment of a water communication between Lake Erie and the Hudson River. As he was borne in a barge along that magnificent canal (called the *Grand Erie Canal*) he was every-where saluted with the ringing of bells, the firing of cannon, and other joyous demonstrations.

It is not, however, intended to dwell here upon his brilliant career as a statesman and politician, but to refer to his connection with the cause of education, and the mighty impulse which was given to it in the state of New York by his genius and public-spirited exertions. The foundation of the state school fund had already been commenced; but nothing had been done for public education in the city of New York. In 1805, Clinton, then mayor of the city, joined with several distinguished citizens in obtaining an act of incorporation for the *Society for Establishing a Free School in the city of New York, for the education of such poor children as do not* *belong to, or are not provided for by, any religious society;* and for a period of 21 years, from 1805 to 1826, he was the president of the society. This society was afterwards known as the *Public School Society*, and its operations fill a large space in the educational annals of the city. In 1809, on the occasion of the inauguration of its first large school (for it commenced with a few poor children, in a single room), Clinton delivered an interesting address, in which he referred to the previous work of the society in connection with the Lancasterian system, in the following words: "When I perceive that many boys in our school have been taught to read and write in two months, who did not before know the alphabet, and that even one has accomplished it in three weeks—when I view all the bearings and tendencies of this system—when I contemplate the habits of order which it forms, the spirit of emulation which it excites,—when I behold the extraordinary union of celerity in instruction and economy of expense,—and when I perceive a great assembly of a thousand children under the eye of a single teacher, marching with unexampled rapidity and with perfect discipline to the goal of knowledge, I confess that I recognize in Lancaster the benefactor of the human race—I consider his system as creating a new era in education, as a blessing sent down from heaven to redeem the poor and distressed of this world from the power and dominion of ignorance." The merits of the mutual system of instruction as a means—and then the only means—of diffusing the benefits of education among all classes of the people, had impressed themselves deeply upon his philanthropic mind. He discerned clearly, to use his own language, that "the first duty of a state is to render its citizens virtuous by intellectual instruction and moral discipline, by enlightening their minds, purifying their hearts, and teaching them their rights and their obligations." He took an active part in enlarging the means of education by augmenting, and rendering more available, the school fund of the state. In 1826, in his annual message, he remarked, "Our common schools embrace children from 5 to 16 years old, and continue to increase and prosper. The appropriation for the school fund for the last year was $80,670, and an equivalent sum is also raised by taxation in the several counties and towns, and is also applied in the same way. The capital fund is $1,333,000, which will be in a state of rapid augmentation from sales of the public lands and other sources; and it is well ascertained that more than 420,000 children have been taught in our common schools during the last year. The sum distributed is now too small, and the general fund can well warrant an augmentation to $120,000 annually." In May, 1824, the *Presbyterian Society for the Promotion of the Education of Youth* elected De Witt Clinton its president, and he continued to occupy this position till his death. On taking the chair, he delivered an address, in the course of which he said, "Monitorial education, Sunday schools, and Bible societies are the great levers which must raise public opinion to its proper elevation." He also took an active interest in the *Infant School Society of New York*, founded in 1827, upon the plan of similar institutions in Great Britain. These schools were designed to receive such children of the laboring poor, as had not attained the age at which they could be received into other schools. Indeed, such were the active beneficence and public spirit of De Witt Clinton, that, in the community to which he belonged, there was scarcely an enterprise designed, in any way, to promote the good of mankind, in which he did not take a leading part. Among such may be further mentioned, the *New York Hospital* and the *New York Historical Society*, of the latter of which he was the president from 1817 to 1820. He was also a member of most of the literary and scientific institutions in the United States, and of several of those of Great Britain and the continent of Europe. It was well remarked by Dr. Samuel H. Cox, one of his distinguished contemporaries, that "he was remarkable at once for the combination of great qualities, and the happy equilibrium of their adjustment. He was unquestionably a man of genius, a scholar, a jurist, a statesman, an enlightened political economist, a deep and practical projector, and a polished gentleman."—See HOSACK, *Memoir of De Witt Clinton* (N. Y., 1829); S. S. RANDALL, *History of the Common-School System of the State of New York* (N. Y., 1871). (See also NEW YORK.)

COACH, a cant term applied to a private tutor (particularly in the English universities), who prepares students to pass the public examinations (hence the verb *coach*, to give such instruction). Such tutors are graduates from the university, and are prepared for the special function which they perform, not only by scholarship, but by experience in the particular requisites of the college examinations, as well as by address in teaching. —See BRISTED, *Five Years in an English University* (N. Y., 1852).

CO-EDUCATION of the Sexes, a term used to denote the system of educating males and females together, that is, in the same institution, school, or class, and by means of the same studies, and methods, pupils of each sex receiving the same school training and culture. This system, in the lower grades of schools, has been always prevalent in the United States, as being the most convenient and economical for small communities. Where only one small district school could be supported, of course, the separate instruction of boys and girls was out of the question. This practice, so common, appeared, and still appears, to receive not only the tolerant assent of parents as a necessity, but, in most cases, an unqualified approval, as being not simply expedient, but, in all respects, the best to be adopted. In some of the large cities, as the schools grew large, and were composed of children gathered from all classes of society, it was often deemed best to organize separate boys' and girls' schools; especially, as this could be done without any injury, but, probably with a benefit to the classification. Private seminaries, however, have generally been separate schools, except those for the youngest pupils. Passing from the grade of primary schools, we find the propriety of co-education to be a question among educators; while many parents prefer that even the youngest children of their families should attend schools exclusively for either sex. Those who oppose co-education allege as reasons for their views, (1) That there is need of a better adaptation of instruction and discipline to the peculiarities of the sexes than is possible in mixed schools; (2) That the manners of the girls are unfavorably affected by the constant example of the rougher, coarser conduct of the boys, the latter receiving but little or no benefit from the presence of the girls; and (3) That the moral character of each is liable to be impaired by a premature development of the sexual instincts, caused by the constant presence of the other sex. With but few exceptions, these arguments are advanced by those who have only theoretically considered the subject, or by those whose practical experience has been in connection with mixed schools of which the discipline and management were imperfect, thus leading to abuses which, under proper and normal circumstances, would have been eliminated. On the other hand, where there has been a thorough and proper trial of the co-education of boys and girls, the testimony seems to be strongly, and almost exclusively, favorable to that system. In many of the large cities of the Union, this is the prevalent plan of organization, and the reports of superintendents are quite emphatic in its approval. The alleged benefits arising from it are chiefly the following: (1) Improvement in discipline, the self-will, violence, and rudeness of the boys being restrained by the presence of the girls; while the girls' manners are rendered more easy and self-possessed by daily school association with the other sex; (2) Improvement in instruction and study, the diversities of the sexes preventing extreme methods, and exclusive, one-sided training and study. Thus, it is said, that the tastes of the boys for severer studies, such as mathematics, are corrected by the inclination of the girls for the lighter and more sentimental studies, general literature, poetry, etc.; (3) A more sound and healthy development of both sexes; in support of which it is asserted that "schools kept exclusively for girls or boys, require a much more strict surveillance on the part of the teachers. The girls confined by themselves, develop the sexual tension much earlier, their imagination being the reigning faculty, and not bridled by intercourse with society in its normal form. So it is with the boys, on the other hand. Daily association in the class room prevents this tension, and supplies its place by indifference. Each sex testing its strength with the other, on an intellectual plane, in the presence of the teacher—each one seeing the weakness and strength of the other, learns to esteem what is essential at its true value. . . . That the sexual tension be developed as late as possible, and that all early love affairs be avoided, is the *desideratum;* and experience has shown, that association of the sexes on the plane of intellectual contest is the safest course to secure this end." Thus, the theory of one side in regard to sexual peculiarities is just the reverse of that of the other; but it is claimed that practical experience confirms the latter, while the former is only a theory; and for this claim there appears to be a pretty strong foundation. The citation given above is from the report of one of the most experienced school superintendents of the United States, and is based upon an observation of the mixed system in large public schools for fifteen years. (See *School Report of St. Louis,* 1869—70.) In the city of New York, in 1874, the number of mixed grammar schools was reported as 13, containing, in average attendance, 2,400 pupils; and the superintendent in his report for that year remarked: "A careful examination of these schools, as to their discipline and progress in scholarship, has elicited nothing to discredit, in any way, this mode of organization, as compared with that of the other schools. The principals commend it as possessing many advantages over the plan of separating male and female pupils of such an age and grade of attainments, and parents seem to approve of it." In New York, however, most of the schools are organized on the extreme separation system. The report of the U. S. Commissioner of Education, for 1874, states that there are in the United States 561 schools (secondary), containing 64,129 pupils, male and female (boys, 32,711; girls, 27,942; of others, sex not reported); while the number of separate schools for boys, reporting to the Bureau, was 195, with 13,592 pupils; and for girls, 275, with 20,458 pupils. This would seem to indicate, as might naturally have been expected, a tendency to separate schools for girls; but, at the same time, shows that, in secondary education in the United States, the mixed system prevails. There is, unquestionably, a natural reluctance on the part of many parents to send their daughters to schools in which boys are also educated; but this apprehension of danger seems to give way after a trial of co-education; and, it is claimed that corrupt influences are more liable to abound in schools exclusively for either sex, but particularly in separate schools for girls. "To insure modesty," says Richter, "I would advise the education of the sexes together; for two boys will preserve twelve girls, or two girls twelve boys, innocent, amidst winks, jokes, and improprieties, merely by that instinctive sense which is the forerunner of natural modesty. But I will guarantee nothing in a school where girls are alone together, and still less where boys are."

All the facts and views here considered have, it must be observed, reference only to that limited education which is carried on in schools, where boys and girls are brought together for a brief period to receive instruction in those branches of study which are pursued for the purpose of intellectual education. The question whether such a limited co-education is expedient and proper, does not involve a consideration of the extent to which the distinction of sex requires a diversification of method in education in a larger sense, as comprehending physical, moral, and mental training. Extreme opinions, however, prevail on this point. Dr. Clarke says, in *Sex in Education*, "None doubt the importance of age, acquirement, idiosyncrasy, and probable career in life as factors in classification. Sex goes deeper than any or all of these." On the other hand, it is contended that sex is not to be considered; and this is the position of most women who have written on this question. "Education," says Caroline H. Dall, "is to be adapted neither to boys nor to girls, but to individuals. The mother, or the teacher, has learned little who attempts to train any two children alike, whether as regards the books they are to study, the time it is to take, the attitudes they are to assume, or the amusements they are to be allowed." The general principle, without doubt, is, that education should be adapted to the individual; but as there are many diversities of character, both physical and mental, which arise from the difference of sex, and, consequently, are common to all of the same sex, boys cannot, in every respect, be educated as girls. It is against this "identical co-education," as he calls it, that Dr. Clarke, in *Sex in Education*, so warmly inveighs. "Boys," he says, "must study and work," "in a boy's way, and girls in a girl's way;" which may be very true, and yet by no means invalidate the propriety of school co-education.

In respect to the higher education of women, this question takes a wider range; and, since the diversities of sex are, at this stage, more completely developed, the arguments against co-education become more emphatic on the part of those who view the subject from a theoretical standpoint. These may be summed up as follows: (1) The physiological peculiarities of the female sex render it impossible that young women should undergo the same continuous mental labor as young men, without the sacrifice of their health, and without impairing the functions proper to their sex; (2) The constitution of the female mind is so diverse from that of the male mind, that it requires different studies, different modes of instruction, and different regimen in every respect; (3) The career in life which is the destiny of woman demands a preparation diverse from that which is to fit a young man for the special duties of his sphere. The first of these positions is, of course, of paramount importance; although it is not simply an argument against co-education, but against affording to young women the same facilities for a higher education as are afforded to young men, whether they are educated together or not. "Appropriate education of the two sexes," says Dr. Clarke, "carried as far as possible, is a consummation most devoutly to be desired; identical education of the two sexes is a crime before God and humanity, that physiology protests against, and that experience weeps over." Doubtless, this position was based upon certain facts which came under the writer's observation as a physician; but it is contended that these cases were peculiar and abnormal, the result of an imprudent disregard of individual peculiarities, and that they were not sufficiently numerous to form the basis of so sweeping a generalization; and that there are no facts of the kind within the range of actual experience in co-education to warrant this assertion. Hence, in the words of Miss Anna C. Brackett, "the men, generally, and seemingly without appreciation of its logical results, approve of what Dr. Clarke has said; the women of largest experience condemn, denying his premises, disproving his clinical evidence by adding other facts, and protesting against his conclusions."

Co-education in the higher institutions of learning has, during the last few years, been thoroughly tried in the United States; and the system has rapidly advanced, stimulated by the success which appears uniformly to have attended the experiment. But a few years ago, there was not one college in the United States, which afforded equal instruction to both sexes; in 1874, according to the report of the U. S. Commissioner of Education, there were 97 colleges and universities in which the co-educative system prevailed. Of the academies, normal schools, and high schools, only about seventeen per cent are for boys exclusively, nineteen per cent for girls exclusively, and more than sixty per cent for both sexes. The testimony of those experienced as instructors in the higher institutions, as well as of the *alumnæ* themselves, appears to favor strongly the principle and practice of co-education. In 1853, Horace Mann accepted the position of president of Antioch College, which had just been established; and, as the co-education of the sexes in such an institution was then a novel experiment, he had many misgivings as to the result. Five years afterward, however, in a letter to Mr. Combe, of Edinburgh, he stated, "We really have the most orderly, sober, diligent, and exemplary institution in the country. We passed through the last term, and are more than half through the present; and I have not had occasion to make a single entry of any misdemeanor in our record book — not a case for any serious discipline." Mrs. Mann, in the *Life of Horace Mann* (Boston, 1865), says: "No one conversant with the daily life and walk of Antioch College can deny that the purity and high tone of its morals and manners, in both departments, were unequaled by those of any other known institution." In 1868, the Westminster Review said: "Antioch College has been visited by Emerson, Theodore Parker, Oliver Wendell Holmes, Dr. Bellows, and other distinguished men; and the testimonies as to its superior character have been uniform." The writers of the article referred to (*The Suppressed Sex*, Westminster Review, Oct. 1868), stated, that he had resided in the vicinity of Antioch College under circumstances that afforded ample opportunities for forming an acquaintance with its plan, professors, and students; and, although quite familiar with the University of Virginia, Harvard, and to some extent with English universities, he expressed his "entire conviction that, in none of those male institutions, can there be found anything comparable to the moral elevation, the refinement, or the intellectual enthusiasm which characterize the students of Antioch." As to the ability of the female students to perform the intellectual tasks assigned to those of the other sex, the testimony of college presidents and professors is uniformly and strongly favorable. President Fairchild, of Oberlin, in 1874, said, "During my experience as professor—twenty-seven years in all—I have never observed any difference in the sexes as to performance in recitation. President Angell, of the University of Michigan, said (1874), "We have not had the slightest embarrassment from the reception of women. They have done their work admirably, and, apparently, with no peril to their health." President White, of Cornell University, in an address delivered in 1874, said, "The best Greek scholar among 1,300 students of the University of Michigan a few years since, the best mathematical scholar in one of the largest classes of the institution to-day, and several among the highest in natural science and in the general courses of study, are young women." President Magill, of Swarthmore College, in an address before the Pennsylvania State Teachers' Association, August, 1874, said, "As a rule, the more faithful and conscientious discharge of their duties, which characterizes the young women, has produced a slight difference in their favor, in the matter of scholarship. The average standing of the nine young women, for the four years, was 86.8; that of the four young men, 82.2." Professor Orton, of Vassar College, in an address (entitled *Four Years in Vassar College*) before the National Educational Association, August, 1874, said, "Vassar graduated last June 42, being just half the number who have been connected with the class. Amherst graduated 62 out of 95, and Cornell 65 out of 261—a painful example of 'the survival of the fittest'. During the past year, *eleven* per cent of the undergraduates in Vassar have been kept from college duties more than ten days on account of illness; while at Amherst, where the physical education of the young men is more carefully attended to than at any other college, the percentage was *twenty-one*." Professor Hosmer, of the University of Missouri, in a paper entitled *Co-Education of the Sexes in Universities*, read before the National Educational Association in 1874, cited many instances of an experience unfavorable to the co-education of young men and women, and thus very forcibly illustrated the need of great vigilance and caution in the management of institutions where the sexes are thus educated. Still he sums up the matter in the following words: "The co-education of the sexes in universities is possible; even to some extent desirable, on account of a certain good influence which the sexes may exert upon each other. That co-education is a matter of no difficulty, we are not to believe; much less that it is to be accepted as the power which is to produce straightway a millennium of purity and good order."

As to the effect of such an education upon the after physical health and vigor, and the longevity, of the female students, the statistics are, probably, insufficient to decide the question either way. Those given in Adelia A. F. Johnston's essay on *Oberlin College* are very interesting and suggestive, and seem to disprove the danger which, some physicians have alleged, is attendant on such a system of co-education. Of the 620 women graduated, up to 1873, at Oberlin College, some, she says, have been "teachers in our common schools and in our high schools, missionaries, both in the home and foreign field, professors in female medical colleges, founders of asylums and homes of refuge, and leaders in all benevolent enterprises." The number of deaths among the *alumni* is stated to have amounted to a little over 10 per cent; among the *alumnæ*, to 9.67 per cent. Twenty cases of *alumnæ*, the names of whom are taken in alphabetic order from the roll, are cited, to show how many, seventeen years after their graduation, were leading lives of healthful vigor and activity; and the facts in regard to each afford additional testimony in disproof of the peril of "identical co-education" as regards the health of the students. In brief, it may justly be said, that the testimony of practical educators is greatly in favor of the co-education of the sexes in the higher institutions of learning. The recently established Boston University has been organized avowedly on the principle, that a "university should exist not for one sex merely, but equally for the two." "It welcomes," says the *University Year Book*, vol. II., "woman not merely to the bench of the pupil, but also to the chair of the professor. It is the first institution in the Commonwealth of Massachusetts to admit the two sexes to common advantages in classical collegiate studies; the first in the world to open the entire circle of post-graduate professional schools to men and women alike."

In Europe, co-education is generally discouraged; still, the principle seems to be gaining strength, in consequence of the results of the provisions made for the higher education of women. In Switzerland, women have been admitted to the various departments of the universities since 1864. In the university of Zürich, many young Russian women have been educated; and in the university of Bern there were, in 1875, 32 female students, pursuing their studies without any discrimination as to sex. Women are now welcomed to university instruction in Vienna, Paris, Rome, Leipsic, Göttingen, Breslau, and some other European institutions. Efforts have been made, unsuccessful as yet, under the leadership of Miss Jex Blake, to open to female students the university of Edinburgh; and, practically, co-education is sanctioned in connection with the "university examinations for women" in England, since the lectures supplied by the University of Cambridge, for the purpose of affording a preparation for these examinations, are open to both sexes. (See EXAMINATIONS.) In London, in 1874, a college was opened under the name of *College for Men and Women*, which recently reported about 500 students. In Cambridge, the establishment of Newnham Hall and Girton College for young women shows the growth of public sentiment in favor of the higher education of women, and is a step toward co-education in the University Plenum. Girton College holds simultaneous examinations with those of the university, and uses the university examination questions. According to the report of the *National Union for Improving the Education of Women* (1874), more than two-thirds of all the professional lectures of the University of Cambridge have been thrown open to women. Public sentiment in Great Britain is growing in favor of co-education. Some of the great leading journals have already commenced to advocate it. *The Examiner* declares. " We believe the separation of the sexes in the worlds of learning and thought to be simply evil. To allow young men and young women to meet together for amusement and frivolity, and strictly to part them when at work with any serious endeavor, is surely foolish."—See E. H. CLARKE, M. D., *Sex in Education* (Boston, 1873); and *The Building of a Brain* (Boston, 1874); ANNA C. BRACKETT, *The Education of American Girls* (N. Y., 1874); E. B. DUFFEY, *No Sex in Education* (Phila., 1874); *Westminster Review*, Oct. 1868, s. v. *The Suppressed Sex*, and Oct. 1873, s. v. *The Education of Women in America*; *Boston University Year Book*, vols. I. and II.; D. BEALE, *University Examinations for Women* (London, 1875); *Report of the Public Schools of St. Louis*, for 1869—70, and 1872—3; *Report of the Commissioner of Education* (Washington, 1875).

COLBURN, Warren, one of the most eminent American mathematicians and teachers, was born at Dedham, Mass., March 1., 1793, and died at Lowell, Sept. 15., 1833. His parents were poor; and Warren, who was the eldest son of a large family, could attend the district school only a portion of the year, working during the remainder on his father's farm. Subsequently, he worked in the factories, till having turned his attention to machinery, he followed, for some time, the trade of a machinist. He had, however, always been diligent in the improvement of his mind, manifesting an unusual talent for arithmetic; and, in his twenty-third year, he entered Harvard College, at which he graduated in 1820. After leaving the college, he taught a private school in Boston; and in 1821 published his *First Lessons in Mental Arithmetic*, the book which made him famous. The publication of this work, to a certain extent, revolutionized the method of teaching arithmetic then in vogue, substituting for the mechanical working-out of problems by rule, exercises in intellectual arithmetic, of a simple and progressive character, requiring not only calculation but analysis. In his address on *Teaching Arithmetic*, delivered in 1830, before the American Institute of Instruction, he compares what he called the old and the new system, thus describing the latter: " By the new system, the learner commences with practical examples, in which the numbers are so small that he can easily reason upon them; and the reference to sensible objects gives him an idea at once of the kind of result which he ought to produce, and suggests to him the method of proceeding necessary to obtain it. By this he is thrown immediately upon his own resources, and is compelled to exert his own powers. At the same time, he meets with no greater difficulty than he feels himself competent to overcome. In this way, every step is accompanied with complete demonstration. Every new example increases his powers and his confidence; and most scholars soon acquire such a habit of thinking and reasoning for themselves, that they will not be satisfied with anything which they do not understand, in any of their studies. Instead of studying rules in the book, the reason of which he does not understand, the scholar makes his own rules; and his rules are a generalization of his own reasoning, and in a way agreeable to his own associations." The composition of this book was the result of Colburn's own teaching, and embodied his methods. "The pupils," he said, "while under tuition, made his arithmetic for him." The sale of this book was enormous, not only in the United States, but in Great Britain, reaching, it is said, in the former 100,000 copies, and in the latter 50,000 copies, annually. It was also translated into most of the languages of Europe, as well as into some others. Its plan is that which was conceived by Pestalozzi, but Colburn realized it, and adapted it to general use. George B. Emerson, in the *Schoolmaster* (1842), says of this work: " Colburn's *First Lessons* is the only faultless school-book that we have. It has made a great change in the mode of teaching arithmetic, and is destined to make a still greater. It should be made the basis of all instruction in this department." Colburn's career as a practical teacher was quite short, continuing only three years. The subsequent part of his life was spent in the work of superintending a large manufacturing company, first at Waltham, afterwards at Lowell; but he delivered several courses of lectures on natural history and physics, published a *Sequel to the First Lessons* (1824), compiled a school textbook on algebra, and also a series of reading-books, on an original plan. It was, however, his *First Lessons* that gave him his celebrity as an educator, and that will ever associate his name with the subject of oral or intellectual arithmetic. " There are few men," it has been remarked, " who, in so short and quiet a life, have done so much good, and rendered their names so familiar as Warren Colburn."—See BARNARD, *Educational Biography* (N. Y., 1861).

COLBY UNIVERSITY, at Waterville, Maine, under the control of the Baptists, was founded in 1820. There are four fine college buildings. The value of the college property is $150,000, and the amount of productive funds.

$200,000. Scholarships to the number of 60, yielding from $36 to $60 per annum each, have been founded for the benefit of students needing aid. The charge for tuition, room-rent, and use of library is $41 per annum. The institution has a gymnasium, a cabinet of natural history, especially rich in the departments of conchology and ornithology, and a library of about 10,000 volumes. The two literary societies have libraries of about 3,000 volumes each. The Waterville Classical Institute is under the control of the trustees of the university, and serves as a preparatory department. The regular university course is the ordinary four years' course of American colleges. Persons of suitable age and attainments are allowed to pursue a partial course for any length of time not less than one year, selecting such studies as they may desire. On leaving the institution, they are entitled to a certificate of their respective acquirements in the studies in which they have passed an examination. The courses of study are now open to young women on the same terms as to young men. In 1873—4, there were 7 professors and 62 students, of whom 5 were females; namely, senior class, 7; junior, 16; sophomore, 14; freshman, 25. The Rev. Henry E. Robins, D. D., is (1876) the president.

COLLEGE (Latin *collegium*, originally meaning any kind of association) is a name given to large classes of educational institutions, especially in the United States, England, and France. The academic use of the word *college* began about the beginning of the 13th century, and originated in the following manner. The students who flocked to the university towns often came into collision with the citizens, and frequent brawls resulted. In order to protect the public peace, as well as to watch over the students, lodging-houses were provided in which the students were under the charge of a superior. These houses were called *colleges*; and this name was afterwards applied to any academic institution of a certain grade, whether connected with a university or not. Colleges appear to have first been established in Paris; and soon afterward in Oxford and Cambridge, in Bologna and Padua, and in Prague and Vienna. They were richly endowed by popes and other dignitaries of the church, princes, and powerful families; and, in some of the university towns just named, they became so numerous in the 15th century, that almost every student of the university was a member of some one of the colleges.

France.—In Paris, several monastic orders founded colleges to give to their younger members an opportunity to study theology and philosophy at the great seats of learning; other colleges were founded in some of the French provinces and in several foreign countries. Among the oldest French colleges were the *College of St. Thomas*, the *Danish College*, *Collége des Dix-huit*, the *Collége Grec* (founded in 1206), the *Collége des Bons Enfants* (1208), that of the *Premonstratensians* (1252), the *Sorbonne*, founded in 1253 for 16 poor students of theology, and subsequently one of the most famous of French colleges, the *Collége de la Congrégation de Clugny* (1269), and the *Collége de Navarre*, founded in 1304 by the Queen of Navarre. In France, these colleges were almost exclusively situated in Paris, where their number, up to the end of the 13th century, rose to 15, and subsequently increased to about 100; many of these, however, were of little importance. From their origin, it is plain that colleges were not originally designed to give instruction, but merely to look after the students, and also to help the poorer ones in their course at the university. The teaching, however, belonged entirely to the university. This was gradually changed, and the colleges, from being merely auxiliary to the university, became finally the centers of instruction. By limiting lectures and disputations to a single department, the colleges became so many distinct faculties; and the university assumed the character of a union of colleges. In modern times, the term *collége* is, in France, the distinctive name for schools of secondary instruction, corresponding to the gymnasiums of Germany and other countries. The higher class of these schools are called *lyceums* (see LYCEUM), the lower, communal colleges (*colléges communaux*). In 1873, there were 78 lyceums and 236 communal colleges; besides, a number of private institutions of a similar grade were called *colléges libres*. These colleges have the character either of Latin schools or real-schools. The former strive to emulate the lyceums, though consisting sometimes of only a few of the lower classes, and frequently giving special prominence to a scientific course of instruction. The latter class of colleges generally exclude Latin, and are real-schools for pupils of the middle class, who intend to devote themselves to industry, commerce, arts, and agriculture. Many of them prepare their pupils to enter the special schools. There is a great variety in the courses of instruction of these schools. Among the best schools of the kind is the *Collége municipal Chaptal* of Paris, founded in 1844 by the city. It consists of 6 classes. The subjects of instruction in the *first* or lower class are (1) Religion; (2) Arithmetic (decimal and common fractions; exercises in the metrical system; calculation of extension, surface, and solids); (3) French and General Grammar; (4) German and English; (5) Geography; (6) General History; (7) Geometrical Drawing; (8) Free-hand Drawing; (9) Singing. In the *second* class, the same subjects are taught, and, in addition, the elements of geometry and mathematical geography. Those of the *third* class, besides the studies of the preceding class, give instruction in algebra, natural philosophy, chemistry, stereometry, mineralogy, and book-keeping. Those of the *fourth* class discontinue arithmetic, and take up trigonometry, Latin, Italian or Spanish, mechanics, botany, and zoölogy. In the *fifth* class, the history of French literature, hygienics, and technology are added. In the *sixth* or highest class, are taught geology, cosmography, industrial and political economy, and the history of France.

The subjects taught in all the six classes are religion, French (in the lower classes grammar, in the higher literature), German or English, history, drawing, and singing. The *Collège de France*, in Paris, is an institution of a higher grade than either the communal colleges or lyceums, presenting a system of instruction almost as comprehensive as that of a complete university. It was founded by Francis I., in 1530, and its professors have always borne the name of *lecteurs royaux*. It has counted among its professors some of the greatest scholars of France, and has at present 28 professors and several distinct courses, embracing all the different sciences, law, medicine, as well as classic, modern, European, and oriental literature.

Great Britain and Ireland. — The colleges founded in England in connection with the universities of Oxford and Cambridge, were not intended to afford instruction, but to aid students in passing through the university. The rich endowments which were conferred upon the colleges, however, soon enabled them to give to their inmates instruction as well as aid, and so increased their reputation and importance, that the university, with its four faculties, gradually lost its hold of the students, and retained little more power than the conferring of degrees and other honors. The studies designed to prepare the students for the academic degrees, were chiefly pursued in the colleges, and it was especially the lectures of the faculty of arts which were transferred to the colleges. "The colleges," said one of the speakers during the discussions upon the Cambridge bill, in the House of Commons, May 30., 1856, "have overshadowed and practically almost monopolized the teaching of the university." Every college is a corporation of its own, having its own statutes, and electing one of its members for the legislative and executive authorities of the university. The general name given to the heads of the colleges is *Heads of Houses;* but there is a considerable diversity in the titles which the Heads of Houses have in different colleges. In some, the head is called *Master*, a title which prevails in Cambridge; in others, *Provost, President, Procurator, Warden, Rector, Perpetual Rector*, or *Dean*. Most of the Heads of Houses are Doctors of Divinity. Next to the Heads of Houses are the *Fellows*, a number of graduates who receive an income from the funds of the college, and are permitted to retain their positions for life, unless they inherit estates of greater income, or marry. The number of fellowships in Cambridge is 430; in Oxford, 540. The Heads of Houses are elected for life by the Fellows. A portion of the under-graduates also derive an income from the funds of the colleges, and are called *Foundation Members. Members not on the Foundation* constitute a large number of graduates who continue their names on the lists of the college in order to have the right to take part in the sittings of the senate, and of independent under-graduates, who according to their rank and expenditures, are called *Noblemen, Gentlemen Commoners, Fellow Commoners, Commoners*, or *Pensioners* (the terms used at the two universities not quite agreeing). The under-graduate, on entering college, is assigned to a "tutor," who is to him *in loco parentis*, superintends his conduct, and provides for his instruction in the different studies by the *college lecturers* or *sub-lecturers.* The latter instruct those students whom the lecturer cannot admit to his classes, either for the want of room, or for some other reason. The tutor may be, at the same time, a college lecturer. The instruction in the college aims almost exclusively at preparing the student for the examinations, which are partly college and partly university examinations. The college examinations are called *collections*, and take place at the end of every term, when each student has to answer in writing several questions relative to all the studies pursued by him. (For the university examinations, see UNIVERSITY.) Oxford University contains 21 colleges and 5 halls; Cambridge, 17 colleges or halls (the two terms in Cambridge meaning the same). Next to these most important institutions, Trinity College, Dublin, holds a high rank. The Queen's University in Ireland consists of three colleges, located in Belfast, Cork, and Galway. Until about 1830, dissenters' colleges were not allowed to grant degrees without requiring the graduates to subscribe to the *thirty-nine articles*. This caused a great deal of political agitation, which resulted in granting the privilege to these institutions, and also in founding the University College, King's College, and the University of London, in which the *thirty-nine articles* are not insisted upon as a condition of admission. These institutions have also served to promote the study of the natural sciences; Oxford and Cambridge being still, in this respect, strongholds of conservatism. The "great public schools," such as Eton and Rugby, are, in effect, colleges. Of these there are 17, some of which have also the name college; as Eton College, Dulwich College, Wellington College, and Winchester College. Some of the schools classed as grammar schools (see GRAMMAR SCHOOLS) are also styled colleges. Besides these, there are many theological colleges, classified as follows: Established, 11; Wesleyan, 7; Congregationalist, 11; Roman Catholic, 11; Baptist, 9; Presbyterian, 3; Calvinist, 2; Methodist, 2; Unitarian, 1; Free Religious Thought, 1. There were also, in 1875 (according to *Whittaker's Almanack* for 1876), five "Ladies' Colleges."

United States.—The American colleges grant degrees in the arts, and give the ordinary course of under-graduate instruction. Some of the older colleges, as Yale and Harvard, add instruction in theology, law, and medicine, and thus approach to the rank of universities in the European sense of the word. Most of the so-called universities, however, furnish only collegiate instruction; and there is, as yet, no fixed distinction between the terms *college* and *university* in the United States. The institutions of this kind considerably differ in their mode of organization. On the one hand, are those which, adhering to the old system, have fixed standards of admission and a curriculum strictly prescribed; on the other, those which have no fixed standard of admission nor prescribed curriculum, their course of studies being arranged in schools, among which the student may select at will. Of the former (the prevailing system) Yale may be taken as a representative; of the latter, the University of Virginia. Between these two extremes, are those that allow a greater or less freedom of choice to the student. Some, like Harvard and Yale, have distinct scientific departments; others, like Cornell University, have parallel courses in which greater attention may be paid to science or to modern languages than in the classical course. With some of the colleges, professional schools are connected. Of about 350 institutions in the United States, styled colleges or universities, and possessing the right to confer degrees, a large majority have preparatory, and some, inferior departments, which often, especially in the West and South, comprise the greater part of the students. Harvard, Yale, and a few others have post-graduate courses of study. The principal degrees conferred are as follows: under-graduate,—Bachelor of Arts, of Science, of Philosophy, of Literature, of Letters; post-graduate,—Master of Arts, Doctor of Philosophy, Doctor of Science; professional,—Civil Engineer, Mining Engineer, Bachelor of Laws, Bachelor of Divinity, Doctor of Medicine; honorary,—Doctor of Divinity, Doctor of Laws. The degree of Master of Arts is ordinarily conferred, as of course, upon Bachelors of Arts of three years' standing; but, in some institutions, it implies a course of post-graduate study, and it is often honorary. Many details respecting the course of study will be given in the articles on the different institutions, and matters relating to professional and other special degrees will be noticed under the appropriate heads. Only the range of studies open to candidates for the degree of Bachelor of Arts will be noticed here, and, for this purpose, Harvard and Yale will be taken as examples. The term of study for this degree is, in almost every institution, four years; the method of instruction is ordinarily a combination of lectures, recitations, and written examinations.

In *Harvard*, the course of study includes Hebrew, Sanskrit, Greek and Latin (language and literature, including ecclesiastical Greek and the elements of Roman law), Anglo-Saxon, English language and literature, German, French, Italian, Spanish, Romance philology, rhetoric, political economy, logic, metaphysics, ethics, history (including international law), mathematics (including the higher branches), physics (including mechanics, astronomy, optics, acoustics, electricity, etc.), chemistry (including mineralogy), natural history (including physical geography, meteorology, geology, botany, zoölogy, palæontology, and comparative anatomy and physiology), music, and the fine arts. In many of these branches, several parallel courses are arranged. The prescribed studies occupy the whole of the freshman year, and about one third of the sophomore and junior years. For the senior year, only certain written exercises are prescribed. The remainder of the time is occupied by electives, in the choice of which the student is limited only by his qualification to pursue them. The classics or mathematics may be pursued through the entire four years. The requirements for admission are embraced in two courses, distinguished by a preponderance of the classics and mathematics respectively. The *first* course embraces Latin grammar and composition, with the translation of Latin prose at sight; Cæsar, *De Bello Gallico*, Books I.—IV., inclusive; Sallust, *Catiline;* Ovid, 4,000 lines; Cicero, eight orations and *Cato Major;* Virgil, *Bucolics*, and *Æneïd*, Books I.—VI., inclusive; Greek grammar and composition; Goodwin and Allen's Greek Reader, or Xenophon's *Anabasis*, Books I.—IV., inclusive, with the Seventh Book of Herodotus; Homer's *Iliad*, Books I.—III., inclusive, omitting the catalogue of ships; arithmetic, including the metric system of weights and measures, with the rudiments of logarithms; algebra, through quadratic equations; as much plane geometry as is contained in the first 13 chapters of Peirce's Geometry; ancient history and geography; modern and physical geography; English composition; the translation at sight of either easy French prose or easy German prose; and either elementary botany, rudiments of physics and of chemistry, or rudiments of physics and of descriptive astronomy. The *second* course embraces Latin grammar; Cæsar, *De Bello Gallico*, Books I. and II.; Cicero, six orations and *Cato Major*; Virgil, *Æneïd*, Books I.—VI., inclusive; Greek grammar; Goodwin and Allen's Greek Reader, first 111 pages, or Xenophon's *Anabasis*, Books I.—IV., inclusive; Homer's *Iliad*, Books I. and II., omitting the catalogue of ships; algebra, as much as is contained in the larger treatises of Greenleaf, etc.; solid geometry, as much as is contained in Peirce's Geometry; plane trigonometry; elements of plane analytical geometry; with arithmetic, plane geometry, history, geography, English composition, French or German, and physical science as in the first course.

In *Yale*, the course of instruction and the terms of admission are similar to those of the better class of colleges throughout the country. The course of instruction includes the Greek and Latin languages and literatures (three years), mathematics (two years), history, rhetoric, French or German (two terms, junior year), natural philosophy, logic, astronomy, physics, mental philosophy, political and social science, chemistry, natural theology and evidences of Christianity, moral philosophy, geology, anatomy and physiology, the history of philosophy, constitutional history, the constitution of the United States, language and the study of language. In some of these subjects, the instruction is imparted simply by lectures. The course of instruction is strictly prescribed, except that the differential and integral calculus may be substituted for Greek or Latin during the first two terms of the junior year.

The requirements for admission are Latin grammar; Sallust, *Bellum Jugurthinum*, or four books of Cæsar; Cicero, seven orations; Virgil, *Bucolics*, *Georgics*, and the first six books of the *Æneïd*; Arnold's Latin Prose Composition, first twelve chapters; Greek grammar; Xenophon's *Anabasis*, four books; Homer's *Iliad*, three books; Greek history; higher arithmetic, including the metric system of weights and measures; algebra; Euclid, first two books; English grammar and geography. In the post-graduate course, facilities are afforded for the study of Anglo-Saxon, the American Indian languages (especially the dialects of the Algonquin family), Sanskrit, the Chinese and Japanese languages, Hebrew, and some other branches not in the under-graduate course.

According to the Report of the U. S. Commissioner of Education for 1874, there were, in the United States, 343 universities and colleges, with 3,783 instructors and 56,692 students, distributed according to the following table:

STATES AND TERRITORIES.	No. colleges.	No. instructors.	No. students.
Alabama	5	55	274
Arkansas	2	8	39
California	12	130	752
Connecticut	3	53	855
Delaware	1	6	45
Georgia	5	35	574
Illinois	23	232	1,904
Indiana	17	132	1,613
Iowa	17	133	829
Kansas	7	42	206
Kentucky	12	79	802
Louisiana	7	56	82
Maine	3	32	355
Maryland	7	77	477
Massachusetts	7	132	1,517
Michigan	7	99	817
Minnesota	3	38	167
Mississippi	6	46	271
Missouri	17	175	1,358
Nebraska	3	19	55
New Hampshire	1	20	265
New Jersey	4	61	645
New York	26	419	3,010
North Carolina	6	31	267
Ohio	34	258	2,430
Oregon	7	30	180
Pennsylvania	27	256	2,238
Rhode Island	1	15	253
South Carolina	8	33	287
Tennessee	19	130	757
Texas	12	64	691
Vermont	3	20	161
Virginia	8	72	1,284
West Virginia	3	23	171
Wisconsin	10	84	664
District of Columbia	5	54	144
Colorado	2	7	15
Utah	1	4	—
Washington	2	3	56

In the foregoing table, the colleges and universities are placed together, but in such case only the collegiate department is to be understood. When there is a medical, law, or theological department, the statistics of the same are given elsewhere under the appropriate title.

Some aggregate statistics from the same report are given in the following table:

No. volumes in college libraries	1,870,455
No. volumes in society libraries	406,144
Aggregate value of grounds, buildings, and apparatus	$39,170,223
Amount of productive funds	28,080,309
Aggregate income therefrom	1,801,890
Receipts from tuition fees	1,768,929
Amount of scholarship funds	1,999,338
State appropriation for the preceding year	611,676

The denominational character of the colleges as nearly as can be ascertained was, in 1875, as follows:

Baptist	36
Free Baptist	4
Seventh-day Baptist	2
Christian	9
Congregationalist	19
Cumberland Presbyterian	6
Evangelical Association	2
Friends	4
Lutheran	15
Masonic	1
Methodist Episcopal	47
Methodist Episcopal, South	9
Methodist Protestant	1
Moravian	1
Mormon	1
Presbyterian	24
Protestant Episcopal	19
Reformed	3
German Reformed	3
Roman Catholic	67
State	12
Swedenborgian	1
Unitarian	1
United Brethren	3
United Presbyterian	4
Universalist	4
Unsectarian	34

A few colleges are not contained in this enumeration, it being uncertain to what denomination they belong. All the important institutions, however, are included.

The presidents of nearly all the leading colleges in the United States met at Hanover, N. H., in November 1874, and discussed, among other things, college athletics (boating etc.), the taxation of college property, optional studies and the comparative importance of classical and scientific studies, and the college and university system. It was resolved not to interfere in any way with regattas and boating. While the influences attending these pastimes might somewhat divert attention from study, and thus lower the standard of scholarship, the physical training and development secured thereby were deemed amply sufficient to compensate for any such unfavorable results. Some of the presidents took strong ground against the taxation of college property. President Eliot warmly argued in favor of optional studies, contending that the United States is the only country which compels a student to pursue prescribed branches after the age of 19. In the discussion on classical and scientific studies, each side had its advocates; but the general opinion was, that the languages and sciences should be studied as means of mental discipline only, during the freshman and sophomore years, and that the succeeding years—junior and senior—should be devoted to philosophy, literature, and special sciences, leaving the languages and mathematics optional during the junior year. — See NOAH PORTER, *The American Colleges and the American Public* (N. Y., 1870); JEX-BLAKE, *A Visit to some American Schools and Colleges* (Lond. and N. Y.); OLIN, *College Life; Its Theory and Practice* (N. Y., 1867); F. ARNOLD, *Oxford and Cambridge; their Colleges etc.* (London).

COLLEGIATE SCHOOLS. See CATHEDRAL SCHOOLS.

COLOMBIA, United States of, formerly New Granada, a republic in the northern part of South America, formed of nine federal states, the combined area of which is variously estimated at from 480,000 to 521,000 sq. m., and the population at about 2,900,000, composed of whites, negroes, Indians, and mixed races. The whites are mainly Spanish, either by birth or by descent; they speak the Spanish language and generally profess the Catholic faith. The country was conquered by the Spaniards in 1536 and 1537, and was created a viceroyalty of Spain, under the title of New Granada, in 1718. After various insurrectionary attempts, the Spanish rule was finally thrown off in 1819, and an alliance was formed with Venezuela and Quito, under the name of the Republic of Colombia. The chronic anarchy which has always reigned among the South American republics, put an end to this union in 1829, and the present republic was organized in 1831.

Under the Spanish rule, primary instruction was chiefly in the hands of the Church; and higher instruction was confined to the colleges. In the latter, a very superficial instruction was given in the classics, history, geography, and the elements of natural science; a smattering of theology was also included. A number of these colleges still exist, but are of little importance. The chief ones are the *Colegio Nacional de San Bartolomeo*, in Bogotá, and the colleges in Cartagena, Popayan, Mompox, Tunja, and Cali.

After the overthrow of the Spanish power, Bolivar aimed to set public instruction upon a firm footing. As a preliminary step, the church property was sold, and all cloisters which had less than eight monks were suppressed. The constitution of 1821 limited the right of voting to those citizens who could read and write; it also provided that the national congress should control public education. Very considerable advancement was made under Bolivar's administration towards an efficient school system; but, unfortunately, his dictatorial proceedings, together with the anarchical spirit of the people, produced such political confusion, that nothing resulted from it. Until the year 1863, the only schools were the relics of the old church and cloister schools, a few private institutions, and some local schools, supported by the municipalities. Public instruction was first placed definitely under the direction of the national government by the constitution of 1863. The law of May 30., 1868, determines the relation of the national government to the several states in the matter of education, prescribing the following as its duties: Besides managing the national university, it is required to maintain normal schools for both sexes; also to establish primary schools, which shall serve as a standard for the establishment of similar schools by the several states. The founding of agricultural schools, together with the entire direction of what school books and apparatus shall be used, is entirely in the hands of the government. The law also provides for a central normal school in the capital of the republic. This law remained a dead letter until November 1., 1870, when a decree was issued upon the subject, providing for a national school board in Bogotá, and a state school board for each of the states to which a national school officer is sent. The public schools are either primary schools or higher schools, and are for both sexes. The primary school gives instruction in reading, writing, and arithmetic, the rudiments of the Spanish language, the elements of physiology and hygiene, singing, natural history, and the history of the nation. The higher schools add to these branches the elements of algebra and geometry, and an elementary knowledge of natural science and general geography. In the girls' schools, the same subjects are taught, though to a less extent; and various feminine accomplishments, such as house-keeping etc., are added. The central normal school has a four years' course. The subjects studied are grammar, Spanish literature, the French and English languages, universal history, the national history, algebra, geometry, trigonometry, general geography, astronomy, industrial physics and chemistry, mechanics and mechanical drawing, natural history and agriculture, anatomy, physiology, and hygiene, music, vocal and instrumental, and gymnastics. The law further provides for a normal school in the capital of each state, the expense of which is borne by that state. A teachers' association is connected with each of these normal schools. Schools are also provided for those small children whose parents are unable to provide them with the first rudiments of education. Every public school must have its own building, which includes the dwelling of the principal; it also has a garden for the practical study of botany, gardening, etc. The law provides, too, that public instruction shall aim at moral culture, but the national government does not interfere with religious education. The course of instruction in the schools must, however, be so arranged that sufficient time may remain for religious instruction by the pastors, or such other persons as the parents may choose. Parents and guardians must either send their children and wards, between the ages of seven and fifteen, to the public schools, or provide other satisfactory instruction for them. As yet, however, there is no penalty for a non-compliance with this provision, although there is a strong sentiment in favor of compulsory education. Besides these schools, the government has established schools in the military barracks, for the instruction of the soldiers in the common branches of learning.

In Colombia, however, as elsewhere, the doctrine of state rights has been a troublesome element. No act of the national congress becomes a law in the several states, until it has been adopted by their respective legislatures; and there is not a single provision of the law pertaining to education which has not been fiercely disputed by the several states; but it has finally been adopted by all but Antioquia. A further disturbing element in carrying out the law, was Ultramontanism. The government called many prominent teachers from abroad, and especially from Germany, for the national normal schools, —a measure at which the clerical party took great offense. The exclusion of religious instruction from the schools also caused a great deal of opposition from the clergy; nevertheless, the system of national instruction has continually grown in favor with the people, and now seems to be as well established as the restless character of the people admits. A number of educational journals are published, of which the following are the principal: *La Escuela Normal*, *El Maestro de Escuela*, *La Escuela Primaria*, *El Monitor*, and *La Revista*.

COLOR, as a branch of object instruction, is of great interest and value; since, at an early age, children take particular notice of colors, and, hence, lessons upon this subject furnish an excellent opportunity for training them to distinguish resemblances and differences, and for encouraging the formation of those habits of attention and comparison which are necessary to the successful study of other subjects. From the fact that many persons are found to be color-blind, it is of great importance that suitable lessons should be given children to enable teachers and parents to ascertain whether this defect exists in any under their care, before they become old enough to engage in any occupation in which color-blindness would be an insurmountable defect. Besides, by the early training of children to observe colors, much of the inability to distinguish them, which is commonly not discovered until later in life, may be overcome by education. Furthermore, a general knowledge of colors, and of their relations to each other, is of importance in nearly every avocation of life. This becomes especially apparent when it is remembered how much depends upon color in the manufacture of materials for dress, furniture, household decorations, in the work of artists, and in various other kinds of employment.

Since a knowledge of color can be gained only through the sense of sight, the methods for teaching it in school should be so arranged that the pupils may have abundant exercise of this sense in distinguishing colors. For the first lessons, place before the pupils the *best colors* that can be procured, in order that they may obtain correct conceptions as to what are good *reds, yellows, blues, greens, purples*, etc. Commence with showing a single color, as red, and leading the pupils to compare red cards, paper, silk, worsted, etc., with it, and thus to notice resemblances and differences between the true red and the several objects compared with it. Give similar exercises, with each of the primary and secondary colors, singly; then place two of these colors before the pupils, and let them select articles to match each of the given colors. Proceed in a similar way with the other colors; and, finally, place several or all of them before the pupils at the same time, and require them not only to point out the colors as named, but to select colored articles to match each.

Frequent changes in the mode of giving these exercises on color will increase the interest of the children in the subject, and add to their knowledge of it, especially when each one has something *to do* in the exercise. After the pupils have learned to know each of the six colors used in the previous lesson, fresh interest may be given to the subject by supplying each child with a piece of colored paper, taking care that those who sit side by side shall, as far as possible, hold different colors. When the papers have been distributed, the teacher may say, "Now, look at your paper, see what color you have, then fold your arms so as to hide your paper. Now, look at the color which I show you; all who know that they have a like color may hold it up.—Right.—Now, look at this color,—all who have one like it, hold it up." Proceed in the same manner with each color;—to close the lesson, request one pupil to collect all the red papers, another all the blues, another the greens, etc. Similar lessons may be given for the purpose of teaching children to distinguish shades of colors, as dark and light reds, blues, greens, etc.

If it be desired to continue these lessons, and teach that the six colors previously shown may be divided into two groups—primary and secondary—procure artists' paints: red (carmine), yellow (chrome), blue (ultramarine); also a small palette, and a palette knife. Place a little yellow and blue on the palette, side by side, requesting the pupils to notice what colors are used. Then, with the knife, mix these two colors together until *green* appears in place of the yellow and blue. Then ask the pupils what color has been produced by mixing the yellow and blue. Proceed in a similar manner to mix red and blue, to produce purple; red and yellow, to produce orange. The teacher may now write on the blackboard for the pupils to learn: *Mixing yellow and blue will produce green. Mixing red and blue will produce purple. Mixing red and yellow will produce orange.* Then pupils may select the two primary colors that will produce given secondaries, also the secondary that may be made from two given primaries. Show the pupils also that light and dark colors may be formed by mixing white or black with other colors. Provide exercises by which the pupils may do something to indicate that they know each fact taught.

In order that children may understand *harmony of colors*, they must be led to observe that to produce harmony, the three primary colors must be grouped together; that if two of them exist in a given secondary, the other primary will harmonize with that secondary. To accomplish this result by teaching, arrange colored paper, or other material, so that *red* and *green*, *yellow* and *purple*, *blue* and *orange*, *pale green* and *violet*, may be compared, and the sensation noticed. Request the pupils to tell what colors are compared in each instance; also whether the *three* primaries exist in each group; as well as to observe that the colors of these groups harmonize. Next, compare red and orange, blue and green, yellow and green, requiring the pupils to observe the effect on the sense of sight; also to state which primaries exist in each group, and to notice that the colors of these groups do not harmonize. These lessons will be more or less useful in proportion to the amount of exercise which the pupils have in distinguishing and comparing colors, and in observing their relations. — See N. A. Calkins, *Primary Object Lessons*, 15th ed. (N. Y., 1871); Burton, *The Culture of the Observing Faculties* (N. Y., 1865); Currie, *Principles and Practice of Early and Infant School-Education* (Edin., 1857). (See also Senses.)

COLORADO was organized as a territory Feb. 28., 1861, from parts of Kansas, Nebraska, New Mexico, and Utah. The part which is situated north of the Arkansas river and east of the Rocky mountains, was included in Louisiana, purchased from France in 1803; the remainder formed part of the territory ceded by Mexico to the United States in 1848. In 1870, the area of Colorado was reported as 104,500 sq. m., and its population as 39,864, which included 456 colored persons, 7 Chinese, and 180 Indians. The settlement of the territory, it may be said, was begun in June, 1858, by a party of gold-seekers from Georgia, consisting of nine persons, under the leadership of W. G. Russel. The region selected by these for settlement was near the present city of Denver, then within the limits of Kansas. Previous to this time, however, there were a few Mexicans in the southern portion of the territory, engaged in stock-raising.

Educational History.—Among the acts passed by the first legislative assembly, which met Sept. 9., 1861, was one that provided for the establishment of a system of public schools, to be under the supervision of a superintendent of public instruction, county superintendents, and district directors. At this time, the school population of the territory was very small; hence, the law, although comprehensive and liberal, was of little practical use. At a subsequent session of the legislature, the office of superintendent of public instruction was practically abolished by making the territorial treasurer superintendent *ex officio*, with a salary of $100 per annum. Unlike most of the recently settled states and territories, Colorado had for her pioneers not families, but individuals, not women and children, but gold-hunting men and adventurous explorers, few of whom were to be found for two successive years in the same locality, and none of whom intended to remain for a longer time than was required to gather a fortune. Hence but little interest was manifested in schools (indeed, at that period, there was scarcely any necessity for their establishment), until about the year 1869, by which time the natural resources of the territory—agricultural, mineral, and climatical—had been made manifest to such an extent, that railroads were projected, colonies were organized in the east, and those who had been here during the preceding years felt no desire to emigrate. The number of school children increased rapidly, and the necessity for a permanent and liberal school system not only became apparent, but was demanded by the people. In 1870, the school law was revised; the office of superintendent of public instruction was again created; and Wilbur C. Lothrop was appointed to fill the office for two years, and re-appointed, in 1872, for a second term. Before the expiration of his second term, however, Mr. Lothrop resigned, and Horace M. Hale was appointed to fill the vacancy, and reappointed for the full term ending in February, 1876.

School System.—The superintendent of public instruction is appointed by the governor and confirmed by the legislative council, holds the office for two years, and receives an annual salary of $1200. He has a general supervision of the county superintendents and of the public schools, and is required to report biennially to the governor. The county superintendents (25 in number) are elected at the regular county election for two years; they receive five dollars for each day's service, are required to examine teachers, to grant certificates (valid for a period not exceeding one year), to apportion the county fund, to visit the schools twice each term, and to make a report each year to the superintendent of public instruction. The district directors, consisting of a president, a treasurer, and a secretary, are elected on the first Monday of May in each year by the tax-paying voters of each district. The directors employ teachers, make all contracts for the maintenance of the schools, and perform such special duties as may be delegated to them by the citizens at the time of their election, such as fixing the course of study, designating the kind of text-books to be used, specifying the time during which the schools shall be in session, levying special taxes for building and other purposes, etc. School districts are bodies corporate, formed from time to time by the county superintendent. They may, at a special election called for the purpose, vote to issue the bonds of the district for the purpose of building school-houses. Many of the incorporated towns have special school laws differing somewhat from the general school law. The school fund is obtained from a county tax (not less than two mills on the dollar), from the proceeds of fines collected in the several counties for breaches of the penal laws, from all moneys arising from the sale of waifs and estrays, and from a special tax levied in each district whenever the citizen voters so direct. The county fund and penal fund are apportioned quarterly to the several districts, according to the number of persons in each between the ages of 5 and 21 years. There is no state school tax.

It is provided that the Bible shall not be excluded from the schools, but that no pupil shall be required to read it contrary to the wishes of his parents or guardian. Teachers' institutes are held in the several counties at the call of the county superintendents; but there is no regularly organized teachers' association, nor state normal school. The school year begins October 1st.

Educational Condition.— From the report of Sept. 30., 1875, it appeared that there were in the territory 329 school-districts, 280 public schools, and 172 school-houses. The number of children of school age — from 5 to 21 — was 23,274, and the number of pupils enrolled 10,185. The whole number of teachers employed was 377, of whom 172 were males, and 205 females; and the average monthly salary paid to the male teachers was $60, and to the female teachers, $50. The whole amount of money expended for school purposes during the preceding year, was $210,813.86; and the total value of the school houses and furniture was $414,008. The increase during the preceding year was as follows: In number of school-districts, 16 per cent; in schools, 18 per cent; in school-houses, 16 per cent; in school population, 16 per cent; in value of school property, 23 per cent.

Secondary and other Instruction.— The High School of Denver was established in 1873, and will graduate its first class in 1877. There are also several private and denominational schools, including a school of mines, in Denver. There is also a school for deaf-mutes at Colorado Springs. A proposed state university has been chartered, and located at Boulder. Forty acres of ground have been set apart for its use, and $30,000 are now (1876) in the hands of the trustees to be appropriated to the erection of buildings. Colorado College, at Colorado Springs, was established in 1874 by the Congregationalists; and Evans University, at Evans, was chartered in 1874 by the Presbyterians. A school of mines has also been commenced, at Golden, as the future scientific school of the projected state university.

COLORADO COLLEGE, at Colorado Springs, Colorado, was organized in 1874. It is under the control of Congregationalists. Preparatory and collegiate departments have been established. In 1873—4, it had 5 instructors, and 25 preparatory and 15 collegiate students. It admits both sexes.

COLORED SCHOOLS, a class of schools designed for the instruction of colored children. Such schools are quite common in many parts of the United States, especially in the South, where the negro population is very large. Thus, in South Carolina, in 1874, the whole number of children of school age (6 to 16, inclusive) enumerated was 230,102, of whom 84,975 were white, and 145,127 colored children; and of a total enrollment of 100,719, the white children numbered 44,470, and the colored children 56,249. In all the old slave states, and in many of the northern states, the feeling of aversion to, or prejudice against, the negro race is so strong, that the public school system can be made effective only by the establishment of separate schools for colored children; since many white parents would refuse to permit their children to attend schools in which the "co-education of the races" was carried on. This feeling is sometimes strong even in new communities. Thus, in Montana, the legislative requirement of separate schools, according to the report of the superintendent for 1873, has practically excluded colored children from all opportunity to obtain an education; and he remarks, in this connection, that "prejudice should not be permitted to stand in the path of justice," and urges, that the schools should be open to all children without regard to color. In some of the older and larger northern states, this distinction, of separate schools for white and colored children, is fast passing away. Thus, in Pennsylvania, in 1874, there were only 73 schools for colored children out of an aggregate number of schools of 16,641; and an attendance of only 2,500 pupils, out of about 440,000. In the state of New York, the whole expenditure for school purposes in 1874, was $12,298,729; and of this only $66,126 was expended for the support of colored schools in the state, those in the towns costing only $7,768, and those in the cities, $58,458, of the latter of which $46,676 was expended for the support of the colored schools of New York City. In that city, separate schools for colored children have existed since the establishment of the African Free School, in 1787, by the *Society for promoting the manumission of slaves*, incorporated in 1785. In 1838, the name *African Schools* was changed to *Colored Schools*, on the petition of the teachers. Previous to this time, these schools had been transferred to the *Public School Society*, which then had the charge of all the other common schools of the city. In 1835, the whole number of pupils enrolled in these schools was about 1608, with an average attendance of 757; and the annual report of the city superintendent for 1875 shows an enrollment of only 1958, and an average attendance of 872. Although, by the *Civil Rights Bill*, passed by the state legislature in 1873, all the schools were practically thrown open to colored children, few have taken advantage of this, but have apparently preferred to remain in the separate schools provided for them, though their attendance is often at considerable inconvenience in consequence of the remoteness of their places of residence from the schools.

In some of the states, the prescribing of separate schools for colored children is a great hardship, since their numbers are not sufficient to warrant the establishment of good schools, if any at all. Thus, in the Ohio state report for 1873, it is stated that, "in many districts, colored children are practically deprived of school privileges and advantages, especially where the number by enumeration is less than twenty; and the separate schools established for them are sometimes continued in session a less number of weeks than the schools for white children in the same district. It is a significant fact that, of the 23,020 colored youth of school age in the state, only 5,950 are under instruction." It has been claimed by some that the fourteenth amendment to the constitution of the United States, which denies the right of any state "to make or enforce any law which shall abridge the privileges or immunities of citizens of the United states," prohibits the establishment of separate schools for colored children; but decisions of the supreme courts in New York and Ohio have settled this question in favor of the separate schools, provided these schools afford their pupils advantages equal to those provided for white children. Such was also the decision of the superior court of Marion County, Indiana, in 1874, which held that "the classification of scholars on the basis of race or color, and their education in separate schools involve questions of domestic policy which are within the legislative discretion and control, and do not amount to an exclusion of either class." Hence, the state law of May 13., 1859 was sustained as constitutional; and it was decided that, while it remained in force, colored children were "not entitled to admission into the common schools provided for the education of white children."

The feeling in regard to mixed schools for white and colored children is very diverse in different localities. In some places, there is a most intense opposition to such schools; while, in others, and sometimes in the same state, there is a complete acquiescence of all citizens in the arrangement. In 1873, the school superintendent of Illinois issued a circular of inquiry, in regard to this subject, to the county superintendents, asking for facts and results; and out of 77 counties reporting, there were in 10, no persons of color to be educated; in 41, colored children attended the same schools as white children; in 10, the colored children were in separate schools; in 16, some were in separate schools, while others attended the same as whites; in 30, no objections to the co-education of the races were reported; but in 27, trouble, of a more or less serious nature, was stated to have occurred. Some of the superintendents were strongly in favor of co-education, while others, including some from counties where the schools were mixed, expressed their opposition to it in the strongest terms.

The opposition to the co-education of the races in the Southern states is, as might be expected, very strong. This was made manifest in the public expression of opinion in regard to the Civil Rights Bill while it was pending in the the United States Senate, in 1874. In *Co-education of the White and Colored Races*, by Rev. W. H. Ruffner, state superintendent of schools in Virginia, published in *Scribner's Monthly* (May, 1874), the author said, "An act of Congress requiring the south poles of all magnets to attract each other, would not be a whit more absurd than one requiring education to be conducted on a race mixture in the late slave states." "There are now," he said, "more than a million and a half of children, white and black, in the public schools of the fifteen ex-slave states;" and he expressed the opinion, that the passage of any law enforcing co-education would have the effect to ruin the common school system in every one of those states. As long as this feeling of aversion to the co-education of whites and blacks exists, whether prejudice or not, it would seem to be the duty of legislators to respect it; and not to endeavor to force upon communities a school organization which they abominate, as long as the equal rights of all citizens are respected. At the same time, it must be borne in mind that experience seems to show that these race distinctions disappear in time; but that this time may be prolonged by unwise violence and haste. Probably, not in the present generation will the existence of *colored schools* cease, at any rate in the Southern states; but that they will finally disappear, as a feature of American common-school systems, there are many that entertain no doubt.

COLUMBIA COLLEGE, in the City of New York, was incorporated by royal charter in 1754, and was called King's College. It was suspended during the revolution, and reorganized, in 1787, under its present name, Columbia College. The college grounds comprise the block bounded by Madison and Fourth avenues, and 49th and 50th streets. The value of grounds, buildings, and apparatus is $787,700; the amount of productive funds, $4,581,700, on which the annual income is $205,000. These figures are exclusive of the medical school. Certain societies and corporations, including each religious denomination in the city of New York, may send students to be educated free of charge. Fourteen scholarships have recently been established, of the annual value of $100 each, and six fellowships (one in science and one in literature) of the annual value of $500 each. The fellowships are offered for competition to the senior class upon graduation, and are tenable for three years. The fellows are required to continue their studies under the direction of the president of the college, but they may choose the place of study. The institution comprises the college proper, the school of mines, the law school, and the medical school. The college proper has 8 professorships: (1) Greek language and literature; (2) German language and literature; (3) chemistry; (4) mathematics; (5) mathematics and astronomy; (6) moral and intellectual philosophy, and English literature; (7) mechanics and physics; (8) Latin language and literature. The course is the ordinary four years' course of American colleges, leading to the degree of Bachelor of Arts. The college has an astronomical observatory, a herbarium, and valuable chemical and philosophical apparatus. The cost of tuition is $100 per annum, but it may be remitted to indigent students. The school of mines was established in 1864. It has 8 professorships: (1) mineralogy and metallurgy; (2) civil and mining engineering; (3) analytical and applied chemistry; (4) general chemistry; (5) mechanics; (6) mathematics; (7) physics; (8) geology and palæontology. The system of instruction includes five parallel courses of study; namely, (1) civil engineering; (2) mining engineering; (3) metallurgy; (4) geology and natural history; (5) analytical and applied chemistry. The course of instruction occupies three years. Those who complete it receive the degree of Engineer of Mines, Civil Engineer, or Bachelor of Philosophy. There is an advanced course for graduates of the school for the degree of Doctor of Philosophy. For candidates not qualified to enter the first year, there is a preparatory year. Collections of specimens and models, illustrating all the subjects taught in the school, are accessible to the students, including crystal models, natural crystals, pseudomorphs, ores and metallurgical products, models of furnaces, specimens illustrating applied chemistry, fossils, economic minerals, rocks, Olivier's models of descriptive geometry, models of mining machines, and models of mining tools. The cost of tuition is $200 per annum, but it may be remitted to indigent students. The law school, now in Great Jones street, was opened in 1858. Under the direction of Theodore W. Dwight, LL. D., it has attained a high reputation. The College of Physicians and Surgeons, on the corner of 23d street and Fourth avenue, became the medical department of Columbia College in 1860, but the connection is little more than nominal. The number of instructors, students, and volumes in the libraries, in 1875—6, was as follows:

Departments.	Instructors.	Students.	Volumes.
College (proper)	13	172	17,500
School of Mines	23	220	6,000
Law School	6	573	4,000
Medical School	29	410	1,200
Total	71	1,375	28,700

According to the triennial catalogue of 1870, the total number of graduates of all the schools was 3,834, of whom 2,721 were living. There were 2,109 graduates in arts, 868 in medicine, 487 in law, 37 in mining, and 333 honorary graduates. The presidents have been as follows: the Rev. Dr. Samuel Johnson, 1754—63; Myles Cooper, LL. D., 1763—75; Benjamin Moore, A.M., *pro tem.*, 1775—6; Wm. S. Johnson, LL. D., 1787—1800; the Rev. Dr. Charles H. Wharton (who probably did not act), 1801; the Rev. Benjamin Moore, D.D., 1801—11; the Rev. Wm. Harris, D.D., 1811—29; Wm. A. Duer, LL. D., 1829—42; Nathaniel F. Moore, LL.D., 1842—9; Charles King, LL. D., 1849—64; the Rev. Frederick A. P. Barnard, LL.D., the present incumbent, appointed in 1864.

COLUMBIA, District of. See DISTRICT OF COLUMBIA.

COLUMBIAN UNIVERSITY, near Washington, D. C., was chartered in 1821 as the Columbian College, and opened in 1822. In 1873, the name was changed by act of Congress to the Columbian University. A majority of the board of trustees and overseers are Baptists, but the institution is required by its charter to be unsectarian. It comprises a preparatory department, a college department, a law department, and a medical department. The institution has not a large endowment, and is supported principally by tuition fees. The value of its real estate is about $500,000.

The regular course of instruction (4 years) in the college department is comprised in seven schools, as follows: (1) School of English; (2) School of Greek; (3) School of Latin; (4) School of Modern Languages; (5) School of Mathematics; (6) School of Natural Science; (7) School of Philosophy. Certificates of proficiency are given to students who pass an examination in certain prescribed studies in any school. A diploma of graduation is given to those who pass an examination in all the obligatory studies of any school. (1) The degree of Bachelor of Letters is conferred on students who obtain diplomas in the schools of English, Greek, Latin, Modern Languages, and Philosophy, and who receive a certificate of proficiency in the School of Mathematics or of Natural Science. (2) The degree of Bachelor of Science is conferred on students who obtain diplomas in the schools of English, Modern Languages, Mathematics, Natural Science, and Philosophy. (3) The degree of Bachelor of Arts is conferred on students who obtain diplomas in any six schools, and who receive a certificate of proficiency in the residuary school of the entire course. (4) The degree of Master of Arts is conferred on students who, after obtaining diplomas in all the schools of the college, sustain a final and satisfactory examination, in review of all the studies prescribed for this degree. The cost of tuition in the college is $60 a year, but it is remitted in favor of students intended for the ministry. The medical department, known as the National Medical College, is in the city of Washington. The law department (opened in 1826) is also in Washington. The college, in 1875—6, had 12 instructors, 103 preparatory and 48 collegiate students, and a library of 5,750 volumes; the law school, 5 professors and 130 students; and the medical college, 11 instructors and 54 students. The presidents of the university have been as follows: the Rev. Wm. Staughton, D.D., 1821—1827; the Rev. Stephen Chapin, D.D., 1828—1841; the Rev. Joel S. Bacon, D.D., 1843—1854; the Rev. Joseph G. Benney, D.D., 1855—1858; the Rev. Geo. W. Samson, D.D., 1859—1871; James C. Welling, LL. D., the present incumbent, appointed in 1871.

COMENIUS, John Amos, the forerunner of Basedow and Pestalozzi, and one of the greatest educators of modern times, was born at Komna, in Moravia, March 28., 1592, and died Nov. 15., 1671. From his birthplace, he received the name Komensky, Latin Comenius, by which his family name was so fully supplanted, that even his grandson, D. E. Jablonsky, did not know it. He studied in Herborn and Heidelberg, and taught for a time a school of the Bohemian Brethren in Prerau, Moravia. He afterward became a preacher of this church at Fulneck, likewise in Moravia, assuming at the same time the direction of the school. In common with the Protestants of Moravia and Bohemia in general, he suffered great hardships at the hands of the Austrian government; and the Thirty Years' war also entailed upon him the most serious losses. At the sack of Fulneck by the Spaniards, he lost his library and manuscripts, and the greater part of his property. In 1624, Protestant preachers were driven from the country, and Comenius was compelled to conceal himself. In 1628, he left Bohemia, and settled at Lissa, in Poland. Soon afterward he assumed the direction of the gymnasium of this town, and, while in this position, gained a European fame by the publication of his first great work (in 1631), the *Janua linguarum reserata* (Gate of Tongues unlocked), a new method of teaching languages, especially Latin. This book met with an extraordinary success, being translated into twelve European, and even into several Asiatic languages. At a synod held in Lissa, in 1632, he was elected bishop of the Bohemian Brethren. In 1638, he received a call from Sweden, to reform the educational system of that country, but he did not accept it. He sent, however, to the Swedish government a Latin translation of the greatest of his pedagogical works, the *Didactica magna seu omnes omnia docendi artificium*, which he had planned in Lissa as early as 1629, and had now completed in German. An extract from this work having been printed by some of his friends in England under the title *Prodromus Pansophiæ* (London, 1639), he received an invitation from England to reform public instruction there. In compliance with this invitation, he went, in 1641, to London, but political troubles in Ireland prevented his accomplishing anything. In 1642, he was invited to Sweden to consult with Oxenstiern, the chancellor of the kingdom, on educational matters. Oxenstiern had read the *Prodromus*, and recommended Comenius to pursue his undertaking, but first to care for the needs of the schools. The Swedish government established Comenius in the Prussian town of Elbing to compose a work upon his method. After laboring four years, he returned in 1646 to Sweden. Three commissioners examined his work, and declared it proper for printing when Comenius should have finally revised it. He returned to Elbing to do this, and thence, in 1648, he went to Lissa, where, in the same year, he brought out his work, the *Novissima linguarum methodus*, which substantially brought to a close his literary labors in behalf of a reform of the methods of instruction. In the same year, the Bohemian Brethren elected him *Senior Bishop and President of the Synod*, a position which he retained to the end of his life. In 1650, upon an invitation from Prince Rakoczy, he went to Hungary and Transylvania, and remained there four years, during which time he organized a school at Patak (also called Saros Patak). Here Comenius wrote, among other works, his celebrated *Orbis Sensualium Pictus*, which was published in 1657 at Nuremberg, and, in various forms has continued a favorite book for children down to the present time. In 1654, Comenius returned to Lissa, where he remained until 1656, in which year the Poles burned the city. He lost on this occasion his house, his books, and his manuscripts, the labor of many years. He fled into Silesia, thence successively to Brandenburg, Stettin, and Hamburg, and in August, 1656, to Amsterdam, where he remained until the end of his life, highly honored by all who knew him, and liberally supported by some wealthy merchants whose children he instructed. He printed his *Opera Didactica* (4 vols.), at Amsterdam, in 1657, at the expense of Lorenzo de Geer, one of his patrons.

Comenius's position in the history of pedagogy is chiefly that of a reformer. His dissatisfaction with the prevailing modes of teaching was, doubtless, largely increased by the neglect of his own early education. He did not go to a Latin school until his sixteenth year; and his mind was already sufficiently developed to be dissatisfied with the artificial and worthless instruction there received. At that time, the study of the Latin language was the only means of culture; and the ability to read and write it, was regarded as all that was valuable in education. Comenius insisted upon a study of the mother-tongue as of greater importance than that of the Latin, and declared, moreover, the study of languages to be a means of knowledge, not an end. The aim of education, he asserted, is the development of complete men, and the profoundest knowledge possible of the world without and within. The ideal order of instruction in things, as opposed to instruction in language, is: (1) A *Pansophia*, in which the sum of human knowledge should be treated in its relations to God, the world, and reason; (2) *A Panhistoria*, which should be divided into six classes: biblical history, natural history, history of inventions, distinguished examples of virtue, history of different religious customs, and the history of the world; (3) A *Universal Dogmatic*, or psychology. In this outline, Comenius adopted a great many of the principles of Bacon's *Instauratio Magna*. With Bacon he insisted strongly upon a study of nature at first hand and unfettered by traditional prejudices. He insisted, too, upon the equal instruction of both sexes. Education aims at the development of the human being, and to shut any one out from it, is injustice. The school should be no respecter of persons. He strongly insisted upon the necessity of physical education, and called the attention of educators to the importance of providing airy schoolrooms and pleasant play-grounds. The true order of instruction must be learned from nature. Art can do nothing except by imitation. Upon this point Comenius uses many fantastic analogies, with all of which, however, he mingles a great deal of truth. Many studies are, at the same time, to be avoided, as dissipating the mental strength. All studies must be so ordered that the later are always founded on the earlier, and the earlier supported by the later. Words must be learned only in connection with things. In the study of science the scholar must, as far as possible, have the objects themselves before him; and, when this is impossible, correct drawings should be used. His *Orbis Pictus* is devoted to the exposition of this principle, and is the first attempt at a system of "object teaching." In the study of languages, one's mother-tongue must come first. Children may only learn that part of a language which deals with the notions of childhood. Every language is to be learned more through practice than by rule. Rules must be grammatical, and not philosophical. They must give the form, and not the explanation. Rules are necessary only where the language differs from the mother-tongue. These thoughts may seem commonplace enough at present, but it required no little genius at that time to originate them. Schools he divided into four classes: The mother school, the vernacular school, the Latin school, and the university. The mother school must be in every house. Here the child learns the use of the senses and the use of language. The child enters the vernacular school in its sixth year, and learns reading, writing, arithmetic, singing, hymns, the catechism, the Bible, universal history, etc. In the Latin school, Latin, Greek, Hebrew, and the mother-tongue are studied, together with physics, chronology, ethics, and Biblical theology. The university should be a place for universal study. In all this, intellectual culture must not be separated from morality and religion. According to him, all learning is a means for the moral elevation of mankind. The present life is to be viewed as a preparation for the life eternal; and children and youth must be taught, both by precept and example, to connect this life with God and his commandments. The importance, however, of Comenius as an educator lies less in what he did than in the reform which he inaugurated. His theory that education should be a development of the whole man, that educational methods should follow the order of nature, that nature itself should be studied, and that education should aim at knowledge—this, though imperfectly understood by himself, constitutes a solid foundation for an enduring fame. Comenius always designated Germany, to which country he principally owed his education, as his native country, although Slavic (Czechic) blood may have flowed in his veins. He was master of both the languages spoken in Moravia, his native land, the German and the Czechic; and he acknowledged their respective advantages, but he expressed his regret that there was more than one language.

The second centennial anniversary of Comenius's death was celebrated in 1871, with appropriate solemnities, not only in Moravia, but in almost all the countries of Europe, as well as in the United States; and the Teachers' Association in Moravia concluded to erect a monument to his memory. A fine statue of the great educator has since been executed in Saxon sandstone with much genius and skill by the celebrated sculptor, Professor Seidan, in Prague; and, since August 23., 1875, it has adorned the square before the castle in Prerau. A list of the educational works of Comenius is given in Raumer's *Geschichte der Pädagogik* (translated in Barnard's *German Teachers and Educators*); most of them are contained in the edition of the *Opera Didactica*, published by Comenius himself. A complete list of all his works, educational as well as others, has been published by Palacky in the *Jahrbücher des Böhmischen Museums*, 1829. German translations of the pedagogical works of Comenius, with notes and biography, are published by Dr. Th. Lion, in *Bibliothek pädagogischer Classiker* (Langensalza, 1875), and by Beeger and Zoubek in Richter's *Pädagogische Bibliothek* (Leipsic; of the translation of the *Didactica Magna* in this collection the 3d edition appeared in 1875).—See also Lautbecher, *Joh. Amos Comenius' Lehrkunst* (Leipsic, 1853); Gindely, *Ueber des J. A. Comenius' Leben und Wirksamkeit in der Fremde*, in the proceedings of the Vienna Academy of Science (Vienna, 1855); Quick, *Essays on Educational Reformers* (London and Cincinnati).

COMMENCEMENT denotes, in the United States, the occasion on which degrees are conferred by colleges and universities upon their graduates. This takes place in June or July, and closes the scholastic year, so that the name in this respect appears to be a misnomer. The exercises connected with the commencement sometimes begin on Sunday with a commencement sermon to the graduating class. On the two or three following days, the literary societies among the students hold their annual meetings, and orations are delivered before the societies and before the *alumni* association. A general reunion of the *alumni* of previous years is held, and, frequently, also the graduates of a particular class hold, by appointment, a special reunion. The board of trustees also holds its annual meeting, receives the report of the president of the institution for the past year, and makes the necessary regulations for the year ensuing. All these transactions precede "commencement day", on which the president of the institution, in the presence of the board of trustees, the faculties, and as many friends and visitors as the occasion may bring together, confers upon the graduates the degrees (see Degrees) for which their special studies and examinations have prepared them. The conferring of the degrees is preceded by orations delivered by the members of the graduating class, the "valedictory" and "salutatory" addresses being assigned to the scholars holding the highest rank in the class. The Latin language is frequently used by the "salutatory" speaker, as well as by the president in conferring the degrees.

For the students of colleges and universities, the commencement is an occasion of peculiar interest. The ambition to excel at that time, acts as a powerful and most beneficial incentive to assiduous study. The reunion of former graduates tends to nourish, in all the former students of these institutions, a spirit of devoted attachment to their *Alma Mater*, and thus secures to the cause of collegiate education a large and influential number of zealous friends and patrons. The large concourse of the relatives and friends of the pupils, as well as of the friends of education, and, in smaller towns, of the town population in general, diffuses among the people at large an acquaintance with these institutions and a care for their success, and gives them a popularity which no other feature could secure. A glance at the reports, in American newspapers, of the commencement exercises during the months of June and July, reveals a national interest in collegiate institutions, which is hardly found to an equal extent in any other country; and, if the wealthy citizens of the United States have acquired a world-wide reputation by their liberal donations for educational purposes, the popular commencement exercises may claim to have very largely contributed to this result. Commencement exercises may, therefore, be considered a very potent agent in stimulating the zeal of the students, and in fostering among all classes of the people a just appreciation of the value of higher education.

COMMERCIAL COLLEGES. See Business Colleges.

COMMISSIONER OF EDUCATION. See Bureau of Education.

COMMON SCHOOLS, the name given in the United States to schools maintained at the public expense, and open to all. These schools are public elementary schools, although the common-school system of any state or city often includes schools of several grades, as primary, grammar, and high schools, besides normal schools for the special instruction and training of teachers. Common schools in the rural districts are called *district schools*, being under the supervision and control of the officers of the school district; and for the same reason those situated in the wards of a city are sometimes called *ward schools*. Common schools are established by legislative enactment, and are supported by funds derived from legislative appropriation. (See School Fund.) The expensive common-school systems of large cities are, however, chiefly, if not wholly, supported by local taxation; thus, in the city of New York, the amount received by apportionment from the state for the support of the common schools of the city is very much less than the amount of tax paid by the city for the support of the common-school system of the state. There is no uniform common-school system in the United States—no national system of public instruction, the organization and control of the common schools being left to the individual states; and, even in the states, the tendency is to almost exclusive local authority. The history and description of the common-school system of each state is given, in this work, under the name of the state; for an account of public or popular education in general, see Public Schools. (See also National Education, and United States.)

COMPANIONSHIP, as one of the necessary conditions of a child's life, is an important element in education; indeed, the influence of a child's companions, either for good or evil, is often far greater than any that can be exerted by parents or teachers. The social nature of a child is stronger than that of an adult; and, therefore, to educate it by itself, excluding it from all intercourse with children of its own age, would result not in a natural or normal development, but in a kind of monstrous distortion. The selfish principles of its nature would attain a disproportionate growth and strength; and it could have neither sympathy nor self-control. Hence, companionship is necessary for several reasons: (1) To develop the social sympathies and affections of the child; (2) To cultivate properly its moral nature; (3) To bring into play its intellectual activities, and to accustom it to their ready exercise. Besides, without suitable and congenial playmates, it would not be properly or sufficiently stimulated to bodily exercise; and its physical growth and development would be incomplete. "How many young girls," says Schwarz, "have become diseased in body and in soul by reading! How many have lost their health by close application to ornamental needle-work! They ought, therefore, to be directed, at all suitable times to engage in free bodily exercise, and even in some of the more quiet and gentle gymnastic exercises; they should enjoy frequent opportunities of appropriate amusement in the society of others of the same age." Companionship, therefore, being indispensable, it is of the greatest importance that it should be of the right character. It is particularly true of children, that "evil communications corrupt good manners;" and not only manners, but morals; indeed, the society of the debased will inevitably undermine the whole character, leaving it but an example of incorrigible depravity. Nevertheless, a youth must gradually be accustomed to the exercise of considerable freedom in selecting his or her associates; since the circumstances of after life will necessitate this independence of choice. The great *desideratum* is, that the child's mind should be so impressed with right principles, that it will avoid the companionship of those whose conduct and language it perceives to be vicious. There is, however, always need of great vigilance in order to prevent corrupting companionship, even when the greatest care has been exercised in the previous moral training of a youth; for the stronger will must always control the weaker will, when brought together, and children learn much faster from each other than from their elders. To influence a young person, so as to form his character in a particular direction, or fully to control his actions, it is requisite to cultivate a certain degree of companionship with him. Parents who pursue this course,—fathers making companions of their sons, and mothers, of their daughters, are the most successful in establishing the character of their children. To a limited extent, the same principle may be applied in school education. The austere teacher who never strives to cultivate any other relation between himself and his pupil than that of authority, will never exert any considerable influence over his moral character; while, on the other hand, he who is easy and familiar, who cultivates the friendship, esteem, and confidence of his pupil, will find the latter always glad to be his companion, and will be able to control his conduct to an almost unlimited extent.

COMPETITIVE EXAMINATIONS. See EXAMINATIONS.

COMPOSITION, as the formal expression of thought, and as a branch of school exercise, has usually been confined to that which is written; but by some the signification of the term has been so extended as to embrace also the oral use of language in the expression of a logically connected series of ideas. Thus, it has been said that "*oral composition* may be cultivated from a very early period, indeed from the beginning of the pupil's school education; and whatever degree of facility he attains in it will secure his more rapid advancement when he enters on the study of written composition;" which is undoubtedly true. At the same time, as nothing is gained by extending the application of a term beyond the limits of ordinary usage, it would seem best to restrict the word *composition* to the written expression of thought; more especially as this requires a somewhat diverse training from that which is needed in oral discourse. Of course, the habit of using language correctly in all the oral school exercises, as well as in ordinary conversation, is not only useful but essential as an antecedent preparation for written composition; and in view of this, it is important that pupils should be accustomed, in all their recitations, to be accurate in expression, and not only to use the proper forms of words, but to construct complete sentences, instead of such fragmentary phrases as are very often made use of in answer to the questions of the teacher. Moreover, in all recitations which do not absolutely require a *verbatim* repetition of the language of the text-book, the pupil should be accustomed to use his own language as far as possible, thus drawing upon the resources of his own vocabulary, and his constructive power in expression. But all this is only auxiliary to written composition, which requires special and peculiar exercises, beginning almost as soon as the pupil has learned to write simple words and sentences; indeed, rudimental exercises in composition may constitute an essential part of object lessons, the teacher writing on the blackboard instead of requiring the pupils to write on the slate or on paper. For example, in the description of an object, the pupils observe and state each quality successively, and the teacher writes each separate statement on the blackboard, observing strictly the rules for punctuation and the use of capitals; and then the pupils are required to put the whole into a connected statement, which the teacher also writes on the blackboard. Thus, suppose the object is a piece of *glass*. The pupils say, and the teacher writes, *Glass is hard. Glass is solid. Glass is brittle. Glass is transparent.* Then the whole is formed into a connected statement; and the teacher writes, *Glass is hard, solid, brittle, and transparent.* Such simple exercises are susceptible of a very great variety, and, consequently, may be made to afford a great deal of valuable training both in thought and language. Reading also may be made available in training pupils in the ready and correct use of language, by requiring them constantly to reproduce, in their own modes of expression, the substance of the lessons read; and, as soon as they have learned to write with sufficient fluency, to set down on paper, or on the slate, portions of these statements. Akin to this kind of exercise, is the reading of simple narratives by the teacher, and requiring the pupils to give the substance of them in their own language.

In all these cases, the pupils are trained chiefly in the use of words and the construction of sentences; but the teaching of composition requires, (1) a cultivation of thought; and (2) a cultivation of the faculty of expression. Thought implies ideas and their logical arrangement according to certain laws of association. The mind must recall all that it has learned upon the subject under consideration, — ideas, facts, propositions, opinions, &c., and arrange them into a symmetrical whole. To do this well requires not only maturity of mental culture, but much practice in the use of language, filling the memory not only with a vocabulary of words, but a large accumulation of phrases, and other forms of expression, associated regularly with certain recurrent ideas. The difficulty experienced by pupils in writing compositions is proverbial; and to a considerable extent, it is to be hoped, obsolete; since modern methods of instruction have gone far towards eradicating many of the absurd educational practices of by-gone times, one of which was to require young pupils to write formal compositions upon difficult abstract themes without any, or with very inadequate, preliminary preparation and training. The necessity of such training is now pretty generally recognized, and suitable graded exercises are employed; such as the following: (1) Conversations upon familiar objects, such as usually engage the attention of children; (2) Sentence-making, in various forms, and affording practice in the application of grammatical rules; (3) Formal descriptions of objects; (4) Simple narratives; (5) Didactic essays, graduated from the simplest composition upon such subjects as *a horse, a cow, a flower,* &c., up to those upon complex abstract themes; (6) Argumentative compositions, in which the principles and rules of logic and rhetoric may find an application and illustration. Each of these classified forms of exercise needs much continuous practice; and the pupil should not be required to write miscellaneous compositions until he has been successively trained in those of the first four classes, and has acquired a fair degree of readiness at each stage of his progress. In all the exercises, however, of whatever grade or kind, it is very essential that the pupil should, as much as possible, be induced to make use of his own experience in selecting subjects for composition, writing of what he has himself seen and heard, and using the simplest and most direct language he can command.

Mere grammatical exercises are of little use in teaching composition; perhaps, they are rather a hindrance, since the exclusive attention to the construction of sentences without regard to their meaning or logical coherence, tends to the formation of habits that are directly opposed to success in actual composition. The great point is to accustom the pupils, by constant daily practice, to the free expression of their thoughts in writing. Let them have something to say, and then require them to write it in the most natural way, employing their own modes of thinking and using language, and thus, in the course of time, developing a style; since style is only the peculiar impress of a writer's individuality upon his forms of expression. Paraphrases and translations, however, afford a very valuable kind of exercise in composition; but should not be employed except in the more advanced stages of the instruction.

In the correction of compositions, the teacher should exercise great prudence, so as to impart the kind and degree of instruction adapted to the pupil's progress; and, at the same time, not discourage his efforts by too minute criticism. If a class is under instruction, the prevailing errors of the pupils, as discerned on a perusal of the compositions, will suggest certain topics on which instruction is needed; and this may then be illustrated by examples culled from the compositions without referring to them individually. Especially should the teacher avoid holding up any of the pupils' efforts to ridicule or severe rebuke, unless the inaccuracies are such as result from sheer carelessness. A pupil's whole intellectual career may be vitiated by an imprudence of this kind; since, in general, there is nothing in respect to which persons, whether adults or children, are so sensitive as in regard to their efforts in written composition.

When the compositions have been carefully read, and the errors pointed out by suitable marks, the pupils should be required to transcribe them, so that they may be presented for further revision. The study of grammar and composition should be pursued together in the early stages, and rhetoric and composition in the latter. A distinguished writer thus sums up the requirements of these two branches of study: "Rhetoric, to become a useful branch of modern education, should embrace a gradually progressive course of exercises, embodying successively the facts of language, in the use of words and the construction of sentences: it should include the practice of daily writing, for successive years; frequent exercises in the logical arranging of thought for the purposes of expression, and the adapting of the forms and character of expression to thought; and it should be accompanied by the close study and critical analysis of the works of distinguished writers, with the view to acquire a perfect mastery over every form of style." — See William Russell, *Intellectual Education*, in Barnard's *American Pedagogy;* Currie, *The Principles and Practice of Common-School Education* (Edinburgh, 1872); Wickersham, *Methods of Instruction* (Phila., 1865).

COMPULSORY EDUCATION, a term commonly used to designate the compulsion of parents by state law to provide an education for their children. We find the principle that the government of a state has the right, and that it is its duty, to watch over the education of all the children within its jurisdiction, for the first time expressed in the legislation of Athens and Sparta. Solon gave a law enjoining on parents to have their children instructed in music and gymnastics, and providing further, that no son was bound to support his father in old age, if the latter had neglected to have him instructed in some profitable trade. In Sparta, according to the legislation of Lycurgus, the state charged itself with the entire education of all male children, after they had attained their seventh year. In Rome, the state did not interest itself at all in the education of children, it being left to the care of the mothers. During the period which followed the downfall of the Roman empire, little provision was made, in any of the countries of Europe, for the education of children. Only the candidates for the priesthood and the children of noblemen and persons of affluence received instruction in the cathedral, collegiate, convent, or parochial schools; but the mass of the people grew up without any instruction. (See Cathedral and Collegiate Schools, Convent Schools, and Parochial Schools.) The capitularies of Charlemagne imposed upon all parents the obligation to send their children to a convent or parochial school, to obtain the necessary instruction in religion. These schools were also required to teach reading, writing, arithmetic, grammar, and singing; but no compulsion was to be imposed in regard to any of these subjects. A new interest in the cause of universal education was awakened by the revival of classical studies, in the fifteenth century. More than one of the educational writers of that time demanded that the state government should recognize and enforce the principle, that parents should be obliged to send their children to school. Luther said, that he regarded it as a "duty of the state authorities to compel their subjects to send their children to school," in order that the community might have well-educated clergymen, jurists, physicians, teachers, and other officers; and the new church constitution of Saxony, of 1528, which was chiefly compiled by Melanchthon, required that clergymen should admonish the people to send their children to school, "in order that persons might be educated so as to be competent to teach in the church, and to govern." The church constitution of Würtemberg, of 1559, provided that the pastors should admonish their congregations at least twice a year, to send their children regularly to school. Similar provisions were made in other German states, without, however, adopting the principle of compulsion; but, in regard to instruction in the catechism, which was given in the church on Sundays and other holy-days, a punctual attendance was enforced; and fines were imposed upon the parents of children who, instead of being present to receive this religious instruction were found running about in the streets. In 1640, the General Synod of Würtemberg recognized the duty of requiring all children to go to school, and resolved that all parents should be fined, whose children failed to attend. It was, however, found extremely difficult to enforce this provision; and new rescripts were issued in 1670, 1672, and 1679, to remind the parents of their duties. The first law defining the school age of children, was given by the Duke of Brunswick-Celle, who commanded the parents and guardians of children to send them to school from the sixth year of age. The movement in behalf of compulsory education now made steady though slow progress in all the German states. Prussia introduced it in 1732; Bavaria, which was one of the latest, in 1802. Compulsory education has, since the beginning of the nineteenth century, been the general rule in the German states; and it is a remarkable fact, that, in all the fierce conflicts which have been caused by educational legislation, no party has made any serious opposition to the principle, that the state government may and ought to demand that parents should provide some kind of instruction for their children. This kind of legislation, in Austria, began in the eighteenth century with laws providing that magistrates should send to school-teachers, twice a year, lists of all children entering the sixth year of age, and that the teachers should return monthly lists of absence. Although the school attendance steadily increased, the number of children growing up without education was still very large. After the disastrous war with Prussia, in 1866, the Austrian government hastened to introduce a new educational law similar to that of Prussia, providing for the rigorous enforcement of the principle of compulsory education. In some provinces, it was found extremely difficult to provide for a sufficient number of teachers and schools, and to compel the attendance of children. The statistics of school attendance show, however, a steady increase, and there is no systematic opposition to the principle, which is now being rapidly carried into effect. The cantons of Switzerland, with the single exception of Geneva, and the Scandinavian kingdoms have enacted laws similar to those of Germany; and Denmark, in particular, has had a stringent law on compulsory education in operation since 1814, and has thus effected a remarkably high average education of its entire population. In France, the public-school system was, for the first time, regulated by the educational law of 1833, which embodied the ideas of Guizot and Cousin. Neither this law, however, nor the subsequent regulations recognized the principle of compulsory education; and the school attendance, especially in many of the rural districts, continued to be very small. Louis Napoleon favored the principle of compulsion, and M. Duruy, his minister of public instruction from 1863 to 1869, was one of its most zealous advocates; but the attempts made to introduce it into the legislation of France had to be abandoned in consequence of the powerful opposition which it met with. After the proclamation of the republic, in 1870, one of the most enthusiastic champions of compulsory education, Jules Simon, was appointed Minister of Public Instruction; and the new educational law proposed by him embodied the principle; but the National Assembly refused to adopt the law, 13 of the 15 bureaux voting against it. The principle is generally advocated in France by the Liberals, and opposed by the Catholic party. In England, public opinion has always been strongly adverse to a participation of the state government in school matters. An important advance toward the principle of compulsory education was, however, made in 1870, by the adoption of a bill brought in by William Edward Forster, according to which, within one year, provision was to be made for the education of every child in England and Wales. The question of compulsory attendance was very earnestly discussed in Parliament, and was finally left to the separate school boards, which have a certain discretionary power of enforcing attendance; but it seems that the advocates of compulsion do not mean to be content until its ultimate adoption. Liverpool, Manchester, Oxford, and many other towns have passed by-laws, compelling the attendance of children in the public schools. The Italian Parliament, in 1871, adopted a new school law according to which elementary instruction is required to be given every-where free of charge, and attendance at school is obligatory on all children. In Belgium and the Netherlands, every commune is compelled by law to make provision for a public school; and, in Belgium, indigent children receive, on the application of their parents, gratuitous instruction; but neither of these two states has, as yet, recognized the principle of compulsory education. In Russia, Peter the Great desired to make education obligatory; but the obstinate resistance of his subjects, who called education "their destruction," prevented him from carrying out his design; and the consequence is, that Russia is still among the least educated countries of Europe, there being, in 1875, 1 scholar for about 86 inhabitants. Turkey, in 1869, promulgated a law providing for the establishment of a school in every locality, and requiring all children, both boys and girls, to attend it; but no attempt of any kind to execute the law had been made up to the end of the year 1875. In Greece, communal schools were established by law, in 1834, on the German system, that is, on the system of compulsory education. By the 6th article of the law, all children between the ages of five and twelve years must attend the communal school. Parents are liable to a fine for each hour that the child is absent; but the penalty has fallen into disuse; and it was found, at the census of 1870, that but 33 per cent of the grown-up men, and but 7 per cent of the grown-up women, were able to read and write. Spain and Portugal also have compulsory education acts, but they are not fully enforced.

In America, the right of state authorities to require the attendance of all children at school was asserted at an early date by some of the English colonies. B. G. Northrop, the secretary of the Connecticut state board of education, in his annual report for 1871, says, that Connecticut may justly claim to be one of the first states in the world, that established the principle of compulsory education. Its code of laws, adopted in May 1650, he says, contained stringent provisions for compulsory attendance; and these provisions, with some modifications chiefly designed to give them greater efficacy, continued in force until the revision of the code, in 1810. Public opinion so heartily indorsed this principle, or rather so thoroughly believed in the necessity of universal education, that attendance lost its involuntary character. Outside of Connecticut, however, little appears to have been done in this direction; and even in Connecticut, the difficulty in enforcing the law was clearly shown when the influx of immigration, in the nineteenth century, gave to the state a considerable school population of foreign birth. In 1869, a new law was, therefore, passed, forbidding manufacturers to employ minors under fourteen years of age, who have not attended any public school, for at least three months in each year. The school board appointed an agent to supervise the enforcement of the compulsory attendance law, and the subsequent considerable increase of school attendance is partly ascribed to its enforcement. This law makes it the duty of school visitors to examine into the condition of children employed in manufacturing establishments, and to report violations of the law to the grand jurors of the town. In Massachusetts, the first educational ordinance, in 1642, enjoined the selectmen of every town to see "that their brethren and neighbors teach their children and apprentices, by themselves or others, so much learning as may enable them to read the English tongue, and the capital laws, upon penalty of twenty shillings for each neglect therein." In 1834, children under fifteen years of age were prohibited from working in factories, unless they had attended school during three months of the preceding year. The present school law compels parents and guardians to send children in their charge, between the age of eight and fourteen, to school twenty weeks every year; and no person can be excluded from the public schools on account of race, color, or religion. Towns and cities are required to provide for the education of orphans and the children of drunken parents. In Maine, the school law of the state authorizes towns to make by-laws for the enforcement of attendance of scholars between six and seventeen years of age, and to annex a suitable penalty, not exceeding twenty dollars, for any breach thereof. In New Hampshire, an act of the legislature, approved in July 1871, provides that all parents, guardians, or masters of a child, between the ages of 8 and 14, residing within two miles of a public school, shall send such child to school at least 12 weeks each year. Similar acts were passed in the same year by the legislatures of Michigan and Texas. Nevada passed a law in February 1873, which makes it obligatory on parents and guardians to send every child between the ages of 8 and 14 years to a public school for a period of at least sixteen weeks in each school-year, at least eight of which must be consecutive, unless the child is being otherwise instructed, or is excused from attendance by the board of trustees for some satisfactory reason. The penalty, for non-compliance with this act is a fine of not less than $50, nor more than $100 for the first offense, and not less than $100 nor more than $200 for each subsequent offense. In 1874, compulsory laws were passed by the legislatures of California, New Jersey, and New York. The general features of these laws are similar to those of the state laws already referred to. The school age during which every child is to be instructed is, in New Jersey, from 8 to 13, and in California and New York from 8 to 14. There is some diversity in the time of school attendance each year. New Jersey requires 12 weeks, of which 6 must be consecutive, New York 14 weeks in a day school, or 28 weeks in an evening school, and California, two-thirds of the time during which the public schools are kept, at least 12 weeks of which must be consecutive. The New York law also specifies the subjects in which the child is to be instructed; namely, spelling, reading, writing, English grammar, geography, and arithmetic. It also provides that no child of this age shall be employed, unless the employer has a certificate that such instruction was given the child the previous year, the penalty for violating this law being a fine of $50. In many other states, the passage of compulsory laws is strongly urged. In Indiana, Illinois, Kansas, Minnesota, Mississippi, Nebraska, Pennsylvania, and Rhode Island, the state superintendents, in their annual reports, or the governors in their messages, have of late taken a decided stand in favor of such laws.

The opinions of American educators and legislators, on the subject of compulsory education, continue, however, to be greatly divided. The Hon. Edward Searing, state superintendent of public instruction in Wisconsin, in his annual report for 1874, expresses the opinion, that "the difficulties lying in the way of the successful working of a general compulsory law are numerous and nearly insuperable; so that there is an overwhelming probability of the failure of such a law to attain the ends desired." He believes that there is in such a law "something essentially opposed to the genius of our free institutions,—something essentially un-American." He apprehends no peril to the state from the mere fact, "that a small fractional part of its children do not obtain such primary instruction as the common schools afford;" and the idea that "crime is the direct result of illiteracy" is characterized by him as a "fallacy quite commonly accepted as a truth." An enthusiastic defendant of compulsory education, the Hon. H. D. McCarty, state superintendent of public instruction in Kansas, in his annual report for 1873, thus replies to some of the common objections made to compulsory attendance: "(1) 'Such a law would create a new crime.' I reply, it ought to. To bring up a child in ignorance is a crime, and should be treated as such. (2) 'It interferes with the liberty of parents.' I reply again, it ought to, when they are incapacitated by vice or other causes for the performance of essential duties as parents. (3) 'It arrogates new power by the government.' So do all the quarantine and hygienic regulations and laws for the abatement of nuisances in time of pestilence. Now, ignorance is as noxious as the most offensive nuisance, and more destructive than bodily contagions. Self-protection is a fundamental law of society. (4) 'It is un-American and unadapted to our free institutions.' To put the question in the most offensive form, it may be asked: 'Would you have a policeman drag your children to school?' I answer, yes, if it will prevent his dragging them to jail a few years hence."

While, thus, a wide difference of opinion exists in regard to the principle of compulsory education, there is an almost entire agreement between friends and opponents, as to the character of the existing laws. They are, on all sides, declared to be deficient. Many laws supply no means whatever for the enforcement of the compulsory provisions; and, in such cases, the state superintendents must, of course, report, that the law has amounted to little or nothing. Thus, the state law of New York was pronounced defective and inefficient by the state association of school commissioners and superintendents, at a meeting held in Dec., 1874; and it was unanimously resolved to ask the legislature to "so complete and perfect the act already passed, that it may better secure the results at which it aims." The American laws in favor of compulsory education agree with those of Europe in designating a certain age, during which the state shall enforce the education of every child. A German writer, Rümelin (in *Zeitschrift für die gesammte Staatswissenschaft*, vol. xxiv.), contends, that the state has the right to demand and to see to it, that each of its members receive a certain amount of instruction, but that this right does not give to it the power of depriving parents, for any length of time that may appear necessary to state authorities, of the right of disposing of their children, but only justifies the state in demanding a certain amount of knowledge deemed necessary for the discharge of the duties every one owes to society. Every child, therefore, he argues, should be dismissed from the public school, without any regard to its age, as soon as it has acquired the knowledge demanded by the state.

From the stand-point of the Catholic church, the claim of state governments to enforce education has sometimes been absolutely denied, on the ground that only the church, not the state, has received the divine commission to teach. Some Catholic writers, however, recognize the right of the state to enforce education in concert with the ecclesiastical authorities. The Catholic *Real-Encyclopädie des Erziehungs- und Unterrichtswesens* (vol. iv., 2d ed., Mayence, 1875, art. *Schulzwang*) defines its position as follows: (1) The majority of Catholic parents in Germany are convinced that the schooling of their children is useful, and under the present circumstances indispensable. The church has always had the same conviction, and the state, therefore, acts in concert with both, if it makes school attendance obligatory. (2) The instruction demanded by the state should be limited to what is necessary, and be confined to reading, writing, the four fundamental rules of arithmetic, and religion. It is entirely unnecessary to extend compulsory education to 7 or 8 years, and 5 or 6 hours a day. (3) The state has no right to prescribe where the knowledge demanded by it shall be obtained. This must be left to the parents. (4) Private schools cannot claim to be entirely exempt from an inspection by state authorities. They should work in concert with the church and the state.—See the *Annual Reports of the U. S. Commissioner of Education* (1871—74); V. M. Rice, *Special Report on Compulsory Education etc.* (Albany, 1867); D. A. Hawkins, *Report on Compulsory Education* (N. Y., 1874); Francis Adams, *The Free School System of the United States* (London, 1875); *Addresses and Proceedings of the National Educational Association, August*. 1871 (N. Y. and Wash., 1872); Lukas, *Der Schulzwang, ein Stück moderner Tyrannei* (Landshut, 1865); Buedinger, *Von den Anfängen des Schulzwanges* (Zürich, 1865); Jænisch, *Der Schulzwang, kein Stück moderner Barbarei* (Ratisbon, 1866).

COMSTOCK, John Lee, M. D., a noted American author, and compiler of school books, was born in Lyme, Ct., in 1789, and died in Hartford, Ct., 1858. After receiving a common-school education, he studied medicine; and, during the war of 1812, served in the army as an assistant surgeon. He afterwards settled in Hartford, where he practiced medicine, and where his books were written. He published *Natural History* (1829), *System of Natural Philosophy* (1831), a work which had an extraordinary success, being translated into several languages, and edited for use in Canada, London, and Edinburgh. Up to 1860, it is estimated that at least 500,000 copies of this book had been sold. His other works were *Introduction to Mineralogy, Elements of Geology, The Young Botanist, The Young Chemist, The Youth's Book of Astronomy, Outlines of Physiology, History of the Greek Revolution, History of the Precious Metals, Readings in Zoölogy*, etc., etc. Though mostly compilations, these books possess considerable merit, and some of them have had a very wide circulation.

CONCEPTION, or Conceptive Faculty, the faculty of the mind which retains past perceptions, and forms from them general ideas, or notions, sometimes called *concepts*. In this manner, the individual impressions obtained by perception are associated in the mind, according to their resemblances and analogies, and become the materials of thought; for without general ideas thought is impossible. Thus, the child perceives a horse, but the concept in its mind as the result of the perception, is not of that particular horse, which it will remember to have seen at a particular time and place, but of the horse as one of a class of animals resembling the one seen; and to each one of this class it is at once prepared to apply the name *horse*. As, if you ask a child, How many legs has a horse? he answers, *four*; because such is his concept or notion of a horse, formed from all the perceptions which he has had of this animal. "Nature," says Isaac Taylor, "for purposes which it is not very difficult to divine, has allowed an absolute predominance to the conceptive faculty during the season of infancy, and has granted it a principal share in the mental economy during the succeeding years of childhood." Hence, it is with this faculty that early education has principally to deal. At this period, the mind is to be stored with ideas—images, or mental pictures of past perceptions, which it is to employ as the material for the exercise of the other faculties,—imagination, judgment, reason. "A rich and ready conception," says Currie, "is the soil out of which grows a sound judgment. The cause of error in our judgments lies as frequently in the want of materials on which to base them as on the want of power to compare them when required." He also judiciously remarks, "It is a great mistake to hasten on the child to use the *forms* of judgment before his mind is stored with the materials to which to apply them, under the impression that we are teaching him to think." The faculty of conception is most active in relation to the objects of sight, that is, the perceptions derived from that sense give rise to the strongest or most vivid conceptions; hence, indeed, the word *idea*, meaning *image* or *picture* in the mind. To those who are deprived of the sense of sight, the perceptions produced by the sense of hearing stimulate, perhaps, with almost equal force the conceptive faculty. "The furniture of the conceptive faculty, as derived from the objects of sight," says Isaac Taylor, "constitutes the principal wealth of the mind, and upon the ready command of these treasures, with some specific end in view, depends in great measure its power." The cultivation of this faculty should aim, (1) To give clear, definite ideas of objects and their properties; (2) To imprint them deeply upon the mind, so that they may be permanently retained, and readily recalled; and (3) To associate them, as far as possible, according to their intrinsic or logical relations. It is a well-understood fact that the clearest and deepest conceptions are obtained by a close and accurate observation of the objects from which they are derived. Clearness and strength of perception are followed by the same qualities in conception. Hence, the value of object teaching, the best results of which are the effects produced upon the conceptive faculty. In training the perception, we are, indeed, training the conception; and it is the latter process that is especially valuable, not the former. This training can only be carried on by means of language. No idea can be fixed in the mind to be of any practical value, unless there is linked with it its proper verbal designation. Words as well as ideas are the elements of thought. A large part of elementary teaching consists in analyzing the parts and properties of objects, and, after leading the mind to form concepts of them through sense-perception, applying to them the names by which they are commonly known. As examples of lessons of this kind, the following are given from Currie's *Early School Education*:

TREE.

PLACE—in the ground, in fields, gardens, etc.
FORM—upright, bending, wide-spreading above, with waving motion, etc.
PARTS—Root: below ground, branching, etc.
  Trunk: round, solid, pillar-like, firm, dark, rough, knotty, etc.
  Leaves: heart-shaped, oval, etc.; soft, green, yellow, etc.
  Blossom and fruit in their seasons.
SOUND (*in motion*)—rustling, gentle, violent, etc.

GLASS.

COLOR—light, stained, clear, transparent, obscured, etc.	*Sight.*
FORM (*in windows*)—square, round, oval, lozenge-shaped, etc.	
Thin, light, hard, brittle, cold, sharp, etc.	*Touch.*

SEA.

TASTE—salt, unpleasant, cold, etc.	*Taste.*
SIZE—large, broad, deep, etc.	*Sight.*
COLOR—green, blue, clear, sandy, etc.	
FORM—Surface: plain, wavy, smooth, foaming, etc.	
SOUND (*in motion*)—dashing, murmuring, gentle, violent, etc.	*Hearing.*
cool, refreshing, cold, etc.	*Touch.*

Such lessons admit of an endless variety, and may be either entirely objective, that is, given with the objects placed before the pupils, or purely conceptive: such as those above on the *tree* and the *sea*. Both kinds, however, have the same primary object in view,—to train the conceptive faculty in connection with expression. Observation is also greatly stimulated and guided by such lessons. Thus, to take so familiar an object as the *sky*, of which every child must necessarily have a multitude of conceptions, although perhaps indefinite and almost useless, because not associated with any names. How much would his real available knowledge be increased by an exercise enabling him to enumerate the various appearances of the sky by proper designations. Thus:—THE SKY may be *serene, stormy, clear, overcast, misty, hazy, foggy, gloomy, lowering, bright, resplendent, brilliant, deep, dull, brazen, red, gray, azure, starry, dark, lurid, etc., etc.* In a similar manner, the sensible properties of a great variety of familiar objects may be recalled and named, and in this way the attention of the pupils to minute characteristics may be cultivated, and their command of language much increased.

The conceptions of the mind are greatly influenced by its feelings. An indifferent, apathetic mental mood will effectually preclude the formation of any deep or durable impressions; on the contrary, the conceptions of objects and scenes with which the mind has been brought into contact under circumstances causing deep emotion, either of pleasure or pain, are ineffaceable. "The cherished and imperishable recollections of childhood, often as bright and clear at eighty as they were at twenty, are those treasures of the conceptive faculty which have been consigned to its keeping under the influence of vivid pleasurable emotions." There is no principle which the teacher should more earnestly consider than this, prompting as it does to the effort to associate with the scenes of the child's school life every possible object which may excite its interest, awaken its delight, and lend a charm to its intellectual acquirements.—See Isaac Taylor, *Home Education;* Currie, *Principles and Practice of Early and Infant School-Education;* Russell, *Intellectual Education*, in Barnard's *American Pedagogy;* Porter, *The Human Intellect* (N.Y., 1869).

CONCERT TEACHING, a mode of instruction in which the pupils memorize what is to be learned, by simultaneous repetition. It is thus a kind of rote-teaching, and is subject to all the disadvantages and liable to all the objections incident to that system. In large schools, in which very many pupils are taught together in a single class, this has been a common and favorite practice with teachers; because it has been found a ready way to fix in the memory of children the rudimentary principles of reading, spelling, arithmetic, etc., and to impart to the pupils the ability to repeat, in answer to set questions, what has been thus mechanically learned. The arbitrary associations established in this way are very strong and durable; and, as some things are to be taught arbitrarily, and others to be associated in the mind so that they may be arbitrarily suggested, that is, recalled without any effort of reasoning or other mental process, the method of concert repetition, has a place in teaching that is useful and important. For example, the multiplication table would be of little value if it were so learned, that the pupil would require to reason out, or reckon up, the result of each required combination; the associations must be of such a character, that thought is unnecessary to recall them, the process of simple suggestion being alone required. Hence, in memorizing such things as arithmetical tables, grammatical declensions, conjugations, etc., concert teaching is valuable, on the principles, (1) that all repetition is valuable in order to impress the mind; and (2) that, the sense of hearing being strongly appealed to, the mental impressions and their associations are more durable, and more easily recalled. Besides, by such exercises, the young pupils are constantly employed; their minds are kept steadily upon their school work, and a strong social or collective sympathy is established, which would not be possible by the exclusive employment of individual exercises. In this connection, Currie says, "By this oft repeated simultaneousness of thought, action, and emotion, the mass becomes welded together, takes on one stamp, breathes one spirit.... Such is the foundation of that simultaneous action with which, under the name of *collective lessons* or *gallery lessons*, we are so familiar in the infant school." So strongly is this writer impressed with its usefulness, that he styles it "the very essence of the infant-school system, springing immediately from the root of it, and embodying a first principle of its existence."

The exercise of intelligence is, however, to be considered the chief instrument of education; and this is so much an individual matter, that the limits within which concert or simultaneous repetition is proper, are quite narrow; and the tendency with most teachers is to transcend them. Consequently, the intelligence of many pupils, instead of being properly addressed and exercised, is kept in a kind of stagnant condition, and is thus impaired rather than benefited. The teacher, in giving simultaneous instruction, must endeavor to prevent this. The pupils will have different temperaments and different degrees of mental power; and, consequently, cannot all perform the same work. The questions, when addressed to the whole class, will not be adapted to all the pupils; and if the teacher should depend upon a mere simultaneous response, only a part of the class would be benefited by the teaching. A show of hands is a ready and useful tentative means of ascertaining the condition of the class in this respect; and thus the advantages of the simultaneous and individual plan of teaching may be combined, the teacher selecting from all who raise their hands those who are to answer, and, at the same time, observing carefully who do not raise their hands. Then, when the teacher wishes a certain answer to be repeated for the purpose of impressing it upon the pupils' minds, the class may be required to repeat it as often as may be necessary in concert. Tact and skill on the part of the teacher will make this method of elementary instruction very effective.

In the simultaneous responses, the tones of the voice should be as natural as possible. Without great care on the part of the teacher, concert exercises are very apt to degenerate into a singsong monotonous drawl, which undermines or prevents all proper habits of reading and speaking. The pupils, too, are very apt to pitch their voices too high, or to use a kind of shouting tone, which no intelligent teacher would, for a moment, permit. Under the limitations referred to, and with all proper efforts to guard against the abuses to which this system of teaching is peculiarly liable, it is of great value; but should never be employed, except when the common nature and common intelligence of the children are to be brought into play.—See Currie, *The Principles and Practice of Early and Infant School-Education* (Edin. and Lond.).

CONCORD COLLEGE, at New Liberty, Kentucky, was established in 1845, and chartered in 1866. It is under the control of Baptists. Both sexes are admitted on the same terms. The institution comprises a classical course, leading to the degree of Bachelor of Arts, and a scientific course, leading to the degree of Bachelor of Science. In 1873—4, it had 3 instructors and 69 students. H. J. Greenwell is (1876) the president.

CONCORDIA COLLEGE, at Fort Wayne, Indiana, was organized in 1839 and chartered in 1848. It is under the control of the Evangelical Lutheran Church. The value of its buildings, grounds, etc., is $150,000. The library contains 5,000 volumes. To students whose parents are members of the synod, tuition is free ; others are required to pay $24 per annum. The college has a preparatory and a collegiate course. In 1873—4, there were 15 instructors and 255 preparatory and 133 collegiate students. Dr. W. Sihler is (1876) its president.

CONGREGATIONALISTS. This denomination takes its name from the fact, that the church government is lodged with each local congregation or *ecclesia*. And yet, in this respect, the Congregationalists do not differ essentially from the Baptists, the Universalists, and the Unitarians. The Congregationalists of the United States correspond, in general, with the Independents of England, and these names are used somewhat interchangeably on both sides of the water. The difference as far as there is a difference, is found in this, that the word *Independent* has a stronger reference to the absolute and final power of the local church, while the word *Congregational* suggests more the comity, fellowship, interchange between churches that are, nevertheless, independent. The word *Congregational* and that which is peculiarly suggested by it, is rather growing in favor in England; but hitherto the English Independents have made less of councils, conferences, associations, than have the American Congregationalists. The general name in England embracing the Independents, is "The Congregational Union."

The first Congregational church in America was planted at Plymouth in 1620; and the second at Salem in 1629. By the year 1700, the number of churches was about 130. The Presbyterians and Congregationalists had been kindred in their history in the old world, and they early became kindred here. Until within times quite recent, it was the common sentiment, that a man who was a Congregationalist in New England, would be a Presbyterian in the Middle States, and *vice versa*. When the great wave of population began to set westward from the Atlantic shore, in the early part of the present century, these two denominations formed a "Plan of Union", by which they worked together in the founding of churches, schools, and colleges in the Middle and Western States. The great benevolent societies like the American Board, the American Home Missionary Society, the American Education Society, were union societies between these two denominations, until within a few years.

Because of this prevailing sentiment, the Congregationalists of New England did not, until the present century, attempt to found churches distinctly Congregational out of New England, and not till within the last forty years was any special influence put forth in this direction. But now the denomination, in the states and territories, numbers 3,438 churches, of which 1,459 are in New England, and 1,979 out of New England. There are but 57 Congregational churches in the Southern States. The number of ministers belonging to the denomination is 3,300.

The system of common schools originated with the Congregationalists of New England in the early generations, and so thoroughly inwrought is this system with the whole history and habit of the denomination, that it would be an anomaly to find any number of Congregationalists anywhere in this country, without public schools.

From the first they built their institutions upon the principle of an educated ministry, and founded their colleges to this end. The rule has been with slight exceptions, from 1620 until now, that a Congregational church should have a minister, with a collegiate education. In Connecticut, from 1635—1835, there were not far from 1,000 Congregational ministers, and not more than 30 of them were without an English university education, or a collegiate education on these shores. What was true in that state will be found substantially true in all the New England states. Quite a number of the colleges and theological schools which the Congregationalists largely helped to build, under the Plan of Union, now belong to the Presbyterians. But aside from these, their colleges are as follows, with the date of their foundation: Harvard, Mass, (1638), now Unitarian; Yale, Ct. (1700); Dartmouth, N. H. (1769); University of Vt. (1791); Williams, Mass. (1793); Middlebury, Vt. (1800); Bowdoin, Me. (1802); Amherst, Mass. (1821); Illinois, Ill. (1830); Oberlin, O. (1834); Beloit, Wis. (1847); Iowa, Io. (1847); Olivet, Mich. (1855); Pacific University, Oregon (1859); Washburn, Kan. (1865); Wheaton, Ill. (1860); Ripon, Wis. (1863); Fisk University, Tenn. (1867), Carleton, Minn. (1867); Tabor, Iowa (1866); Berea, Ky. (1858); Drury, Mo. (1873); Thayer, Mo. (1868); Doane, Neb. (1872); Colorado, Col. (1874).

The Congregational theological seminaries are, Andover, Mass. (1807)—the oldest theological school in the country; Bangor, Me. (1817); New Haven, Ct. (1822); Hartford, Ct. (1834); Oberlin, O. (1835); Chicago, Ill. (1858) ; Pacific Theo. Sem., Cal. (1869).

Of academies and female schools the list is too long to be enumerated. Some of the oldest and best-known academies to prepare boys for college, in New England, are Phillips Academy, Andover, Mass.; Phillips Academy, Exeter, N. H.; and Williston Academy, Easthampton, Mass. Of female academies, there are Mt. Holyoke Seminary, Hadley, Mass.; Abbott Academy, Andover, Mass.; Bradford Academy, Bradford, Mass.; Wheaton Academy, Norton, Mass. and Wellesley College, at Wellesley, Mass.

Of Congregational colleges in England, some of the more conspicuous are, Rotherham Independent College (1756), with which Rev. F. J. Falding, D.D., and Rev. H. R. Reynolds are prominently connected; Lancashire Independent College (1806), where Rev. J. G. Rogers and Rev. J. Baldwin Brown, both London ministers, are employed as lecturers; New College, London (1850), having among its foremost professors, Rev. J. Stoughton, D.D., and Rev. R. Hulley, D.D.; Theological Hall of Congregational Churches of Scotland (1811), with which Rev. W. L. Alexander is honorably associated, and several other institutions, with the same general character and aim.

The American Education Society, organized, in 1816, to assist young men in humble circumstances, in obtaining an education for the Christian ministry, has given aid, in the sixty years of its existence, to 6,302 young men. It assists them only in the collegiate and theological courses, though, in the early years, it gave aid also in the preparatory departments. Its principle is not to *support*, but to *help* men to help themselves. It gives them $100, a year, each. The society is now giving its aid to 310 young men in thirty different colleges and theological schools. Two years since, this society was united with the College Society, so called, whose function it was to assist young colleges at the West. Since the union, the name of the organization is "The American College and Education Society", and it has now the double duty of aiding young colleges, as well as young men.

The denomination now carries on its benevolent work through six societies, which are distinctively Congregational, namely: The American Board of Commissioners for Foreign Missions, raising and expending yearly about $475,000; The American Home Missionary Society; The American Congregational Union (church-building); The American Missionary Association (work among the freedmen of the South); The American College and Education Society; and the Congregational Publishing Society. Besides these, the Congregational churches bear a part in the union societies, like the American Bible Society, American Sunday School Union, etc. The whole amount of the benevolent contributions of the denomination, last year, was $1,241,014.29.

While the Congregational system of church government lodges the power with each local church, yet it makes much of the advisory power of councils. In the settlement and dismissals of ministers,—in the organization of new churches,—in cases of difficulty in any local church—it is customary to call upon sister churches for counsel and assistance. There has also grown up in the denomination a large system of interchange and fellowship, by means of associations, local and state conferences, and now, at length, a triennial national council.

From the circumstance, that the Congregationalists so early founded their system of public schools and their colleges, it has come to pass, that this denomination has furnished the educators of the country, in the lower, and especially in the higher departments, far beyond any other religious denomination in the land. It has supplied presidents of colleges, and professors in colleges and theological schools in immense numbers. Anything like an enumeration of names, in this particular, would require so much space, that we will not attempt it. But the fact will probably stand unchallenged by all intelligent and observing men. A few conspicuous names may be mentioned, for the most part belonging to by-gone generations. Such were Increase Mather, Edward Holyoke, John T. Kirkland, Jared Sparks, presidents of Harvard College; Thomas Clap, Ezra Stiles, Timothy Dwight, Jeremiah Day, presidents of Yale College; Eleazar Wheelock and Nathan Lord of Dartmouth College. The late Dr. Theron Baldwin, for nearly thirty years secretary of the College Society, by reason of his large organizing power in the department of education, fitly finds a place in this list. Of men still living, but who, by reason of age, have passed out of the offices they so long held, and may be reckoned as *emeriti*, we may name Mark Hopkins, of Williams College, and Theodore Dwight Woolsey, of Yale College. From the beginning until now, the presidents and professors in the Presbyterian institutions have been largely furnished by New England; and the same is true, in a lesser proportion, in the institutions of other denominations. A catalogue of presidents and professors in American colleges and theological seminaries, including only the men born and reared among the "Congregationalists," would embrace several hundred names.

CONNECTICUT, one of the original thirteen states of the American Union, having a population, in 1870, of 537,454, and an area of 4,750 sq. m., being the smallest of the present states except Rhode Island and Delaware.

Educational History.—This topic may conveniently be discussed under three heads: (I) The establishing of schools; (II) The mode of maintaining them; (III) The mode of supervising them.

I. The earliest European immigrants to Connecticut established schools very soon after their arrival. Two distinct colonies were originally planted within the present limits of the state, each consisting of several towns or plantations. Hartford (settled in 1635) was the leading town in the Connecticut colony, and New Haven (settled in 1638), in the New Haven colony. At first, each town acted independently in establishing schools. The earliest records of Hartford are lost, but the oldest extant records show that a school existed there as early as 1642. The records of New Haven speak of a school there in 1639—40, and two years later they contain a vote to provide means for a school. The action of these two leading towns no doubt indicates correctly the similar action of the other original towns. The first code of laws for the Connecticut colony, completed in 1650, required "the selectmen of every town to have a vigilant eye over their brethren and neighbors, to see that none of them shall suffer so much barbarism in any of their families as not to endeavor to teach, by themselves or others, their children and apprentices so much learning as may enable them perfectly to read the English tongue, etc." The same code required every town containing 50 families to "appoint one within their town to teach all such children as shall resort to him, to write and read;" and every town of 100 families, to "set up a grammar school, the masters thereof being able to instruct youths so far as they may be fitted for the university." The New Haven colony code, prepared in 1655, was equally emphatic in requiring the education of all children. The two colonies were united in 1665, and the Connecticut code became the law for the whole colony. In 1672, that code was revised, and the provision requiring a grammar school in every town of 100 families, was superseded by a new law requiring such a school to be maintained in the county town of each of the four counties that had then been organized; namely, Hartford, New Haven, New London, and Fairfield. This law remained in force till 1798. In 1678, every town containing 30 families (instead of 50) was required to maintain a school. A new revision of the code was prepared in 1700, and published two years later. Under the revised code, every town of 70 families, or more, was required to maintain a school eleven months of each year, and every town of less than 70 families, to have a school at least half of the year. In 1712, these requirements were extended to parishes or societies, into which several towns of large extent were divided, from time to time, for the convenience of people in attending public worship. In 1766, each town, and each parish, where there was more than one in a town, was authorized to divide itself into convenient districts, and maintain within its limits as many schools as might be needed to accommodate its inhabitants. Previous to this time, the law had required only one school in each town or society. The law of 1766 led, in time, to the "district system" of establishing and maintaining schools. At first, however, the districts were merely subdivisions of towns or parishes. In 1794, their separate existence began to be recognized in legislation. They were authorized that year to locate new schoolhouses by a vote of two thirds of the citizens, to lay taxes for the same, and to appoint collectors. In 1799, they were empowered to choose clerks and treasurers; and, finally, in 1839, they were declared to be "bodies corporate," and were authorized to elect their own committees. In 1795, 1798, and 1799, laws were passed by which parishes or societies were invested with full control over schools within their limits, and were designated by the new name of "school societies." Such society might be an entire town, a part of a town, or parts of two or more towns; but all action concerning schools was taken by school societies, and towns, as such, had no part in school affairs. In 1856, school societies were abolished, and their powers and duties were transferred to the towns. In 1865, the towns were authorized to consolidate all their districts, provided a majority of the districts in a town consented. In 1866, the right to consolidate was given without that condition; and this law, with slight modifications, is still in force. Under this law, several towns have abolished their school districts and returned to the original "town system."

II. There have been three principal sources of support for public schools: (1) Taxes; (2) Tuition fees, or rate bills; (3) The income of permanent funds.

(1) *Taxes.*—The earliest schools in Hartford, New Haven, Wethersfield, and, doubtless, in the other original towns, were supported in part by appropriations from the town treasuries. The code of 1650 (already mentioned) directed that the teachers should be paid "either by the parents or masters of such children" as resorted to them, "or by the inhabitants in general by way of supply, as the major part of those who order the prudentials of the town shall appoint." The two methods here suggested,—taxes and tuition fees—were, doubtless, combined, as they had been before that code was formed. In 1690, the general court (i. e., legislature) of the colony granted 60 pounds yearly to each of the county grammar schools of Hartford and New Haven, "30 pounds of it to be paid out of the county treasury, the other 30 to be paid in the school revenue given by particular persons, or to be given for that use, so far as it will extend, the rest to be paid by the respective towns of Hartford and New Haven." In 1693, 20 pounds was voted to each of the other two grammar schools. In the revised code of 1700 (previously referred to), an important change was made. The sum of 40 shillings on the thousand pounds was ordered to be paid from the colony treasury to those towns which maintained schools according to law, in proportion to their respective grand lists of taxable property and polls. This sum was assessed in addition to previous taxes, and was thus virtually a town tax for schools. If the amount thus received by any town was insufficient to maintain its school, the deficiency was to be "made up of such estate as hath been bequeathed by any for that use, and for want thereof, the one half to be paid by the town, and the other by the children that go to school, unless any town agree otherwise." In 1712, parishes or societies were placed on the same footing as towns for maintaining schools. The law of 1700, as thus amended, remained in force, with slight modifications, till 1820. The most important modifications were the following: In 1754, the rate of tax was diminished from 40 shillings to 10; in 1766, it was increased to 20; and in 1767, was restored to 40. The burdens of the Seven Years' war (1756—63), doubtless, caused the diminution of the tax. In 1820, the state school fund had become so productive that a law was passed permitting the discontinuance of the tax whenever the yearly income of that fund should amount to

$62,000, which occurred the next year. In 1854, the town school tax was restored, and it has since been repeatedly increased, till it now supplies fully half of the funds for the current expenses of public schools. In 1839, school districts were authorized to tax themselves for current school expenses. This is now done most commonly by the more populous and wealthy districts. In 1871, there was appropriated from the state treasury 50 cents for each child between 4 and 16 years of age. The next year the sum was increased to one dollar and a half per child, which it now remains.

(2) *Tuition Fees or Rate Bills.* — These were a source of school income from the beginning till they were abolished in 1868. Where parents or guardians were too poor to pay them, they could be collected from the town or society.

(3) *Income of Permanent Funds.*—A law already quoted, passed in 1690, refers to "school revenue given by particular persons." The quotation already given from the law of 1700, contains similar language. In 1733, the public lands belonging to the colony, now constituting the north-western part of the state, were set apart to form a permanent school fund, and the avails of these lands, except certain reservations, were distributed among the towns then organized, in proportion to their tax lists; parishes receiving their portions on the same basis. The money thus obtained now constitutes the greater part of the "school society funds" belonging to many of the former societies. A small part of these funds came from the "excise moneys" granted by the colony, in 1766, for the encouragement of schools, and another part from the donations and bequests of benevolent persons. The *Connecticut School Fund* was for more than half a century the main source of public school income. By the charter granted to Connecticut by Charles II. of England, in 1662, the colony extended westward to the Pacific, and from 41° to 42° 2′ N. lat. The part of this territory now belonging to Pennsylvania, was yielded to that state after a bitter controversy, but the title of Connecticut to the remainder, lying farther west, was confirmed. In 1786, this was ceded to the U. S., except a reservation extending 120 miles westward from the W. line of Pennsylvania, and known as the "Western Reserve," or sometimes as "New Connecticut." This tract, except a small part previously disposed of, was sold in 1795 for $1,200,000, which was the original capital of the Connecticut school fund. By judicious management, particularly that of James Hillhouse, commissioner of the fund from 1810 to 1825, and Seth P. Beers, from 1825 to 1849, the capital was increased to over $2,000,000. The first dividend was paid in 1799. The fund now bears interest at 6 per cent, and in some cases more than that. The income, until 1820, was distributed to the school societies in proportion to their respective amounts of taxable property and polls; since that time it is divided according to the number of children between 4 and 16 years of age.—The *Town Deposit Fund* came from the treasury of the U. S. In 1836, Congress directed that the "surplus revenue" then on hand should be divided among the states in proportion to their representation in both houses of Congress. Connecticut received $764,670.60. Of this sum $763,661.83 was divided among the towns according to their population at the census of 1830. Towns organized since that date have (with one exception) received their share of the town deposit fund which belonged to the towns from which they were formed. In theory, this money is merely *deposited* with the towns by the state (whence its name), and is liable to be recalled; but, practically, it belongs absolutely to the towns. At first, one half of the income was devoted by law to public schools; since 1855, the entire income has been so devoted.

III. For the first 60 or 70 years in the history of Connecticut, there appears to have been no official supervision of the schools. The "selectmen" in each town were to "have a vigilant eye" over their townsmen to prevent the "barbarism" of ignorance; but nothing is recorded which indicates that schools were particularly under their care. A law of 1702 speaks of a "committee for schools" as existing in a part of the towns, and similar committees were afterward appointed in the parishes; but the duty of these committees, so far as appears, extended only to the *financial* affairs of the schools. In 1714, the civil authority and selectmen of every town were "directed and empowered, as visitors, to inspect the state of all such schools as are appointed in said town, from time to time, and particularly once in each quarter of the year,.... and to inquire into the qualifications of the masters of such schools and their diligence in attending to the service of the said schools, together with the proficiency of the children under their care." They were also required to give such directions as would render the schools most efficient for the purpose intended. This law remained in force till 1798, when each society—then called a school society—was required to "appoint a suitable number of persons, not exceeding nine, of competent skill and letters, to be overseers and visitors of schools," who were to examine and approve teachers, displace the incompetent and such as disregarded the "regulations by them adopted, superintend and direct the instruction of the youth in letters, religion, morals, and manners," and in other ways promote the efficiency of the schools. When the school societies were abolished, in 1856, the appointment of "school visitors" was transferred to the towns.

No state superintendent of schools was chosen in Connecticut till 1838. In that year, a board of commissioners of common schools was created, and authorized to appoint its own secretary, who was to "devote his whole time, if required, under the direction of the board, to ascertain the condition, increase the interest, and promote the usefulness, of the common schools." The board appointed as its secretary Henry Barnard, who served the state efficiently in that position till 1842, when the law creating the board was repealed. In 1845, the commissioner of the school fund, Seth P. Beers, was appointed by the general assembly superintendent of common schools. In 1849, an act was passed establishing a normal school, the principal of which was to be, *ex officio*, superintendent of common schools. Under this act, Henry Barnard became superintendent in September of that year, and continued to hold the office till January, 1855. John D. Philbrick succeeded him for two years, and David N. Camp was superintendent from January, 1857, to August, 1865. In July, 1865, the state board of education was constituted, and was required to appoint a secretary, who by the appointment was made superintendent of schools. The first secretary was Daniel C. Gilman, who filled the position from August, 1865, to January, 1867. The present secretary, Birdsey G. Northrop, entered upon his duties January 1., 1867.

A *State Teachers' Association* was formed April 7., 1846, which meets once a year. Teachers' Institutes are held in different parts of the state, every year. They are provided for by an appropriation of $3,000 a year, from the state treasury. Associations of teachers for mutual improvement are formed from time to time in some towns.

School System.—The general supervision and control of the educational interests of the state are entrusted to the state board of education, which consists of six persons,—the governor and lieutenant-governor of the state, *ex officio*, and one person from each of the four congressional districts, chosen by the general assembly for the term of four years, one going out of office each year, but re-eligible. The secretary chosen by this board is superintendent of schools, as above stated. Towns are required to maintain schools for at least 30 weeks in each year, in every district containing 24 or more persons between 4 and 16 years of age, and for at least 24 weeks in other districts; but no school need be maintained in any district in which the average attendance, the previous year, was less than 8. Each town has a board of school visitors, either 3, 6 or 9 in number, who are chosen by ballot for three years, one third going out of office each year, but re-eligible. In choosing them, no voter may vote for more than half of the number to be chosen when it is an even number, nor for more than a bare majority when it is an odd number. The care of school funds and other school property belonging to the towns, is entrusted to selectmen, and the visitors have charge of strictly educational affairs. They examine and certificate teachers, rejecting those considered unfit or incompetent, prescribe rules and regulations for the management, studies, classification, and discipline of public schools, and direct what text-books shall be used. They approve sites and plans for new school-houses, fill vacancies in district offices, make rules for the care and management of district libraries, and supervise high schools where such exist. They annually assign to one or more of their number, called acting visitors, the duty of visiting all public schools in the town at least twice in each term. They choose from their own number a chairman and secretary, make yearly returns of the number of children between 4 and 16 years of age, and draw all moneys from the state treasury. They also send to the secretary of the board of education such statistical returns as he may call for. As compensation, they are entitled to receive 3 dollars a day, for the time necessarily spent in performing their duties. Each town has power to form, alter, and dissolve school districts within its limits, and any two or more towns may form joint districts of adjoining parts of their territory. Each district is a body corporate, with all the powers necessary for building, purchasing, hiring, and repairing school-houses, employing and paying teachers, and raising moneys by tax or loan. The name or number, and the boundaries of every district are to be definitely ascertained and entered on its own records, as well as on those of the town or towns in which it is situated. Each district chooses yearly by ballot a committee of not more than 3 persons, a clerk, treasurer, and collector. Some large districts choose their committees in the same way that school visitors are chosen, as already described. The committee of a district is its agent, employing its teacher or teachers, and taking charge of its affairs; giving notice of district meetings, and calling special meetings when deemed necessary, or when one-fifth or ten of the voters in the district request it in writing.

Any town may, at any annual meeting, abolish all the school districts and parts of districts within its limits, and constitute itself one district. Such town assumes all the property and debts of the former district, and chooses by ballot, as school visitors are chosen, a committee of 6, 9, or 12 male residents, who take the place and perform the duties of both district officers and school visitors. They arrange for schools, of at least 30 weeks in the year, in the different parts of the town, and take charge of school buildings and other school property. All towns have authority to establish and maintain high schools, and to do what is requisite for that purpose. The state makes yearly payments for procuring and replenishing libraries and apparatus, to such districts as comply with certain requirements. Teachers are required to be examined and approved by the school visitors before commencing to teach, and to keep an accurate record of each scholar's attendance, in registers provided by the state for that purpose. An enumeration of all persons between 4 and 16 years of age is made yearly, in January, and the number is returned to the proper officer by February 5th. The distribution of the school finance and state appropriation is based on this enumeration.

Educational Condition.—The number of *school districts* as returned in 1876, is 1,493, of which 16 comprise each an entire town; about 200 are joint districts, lying in two or more towns, and about 1,280 are each a part of a town. The number of schools was 1,650; of departments, 2,499. The number of *graded schools* was 264; of which 114 had each two departments; 39 had 3 each; 37, 4; 23, 5; 11, 6; 10, 7; 5, 8; 5, 9; 6. 10; 1, 11; 7, 12; 3, 13; 1, 19; 1, 20; 1, 21. The whole number of departments in the graded schools was 1,093. Hence about 1,406 of the public schools were ungraded.

The support of schools (including the cost of building and repairing school-houses) was derived from several sources; namely,

School Fund	$148,220.60	
Town Deposit Fund	46,534.97	
Other Funds	15,614.79	
Total from funds		$210,370.36
State Tax	$202,119.00	
Town Tax	668,167.13	
District Tax	463,775.19	
Total from taxes		$1,334,061.32
Voluntary Contributions		6,881.26
Other sources		41,545.17
Total from all sources		$1,592,858.11

The average wages per month of male teachers was $70.05; of female teachers, $37.35. The highest salary of any teacher is $3,000 a year.

The course of instruction in graded schools varies so widely that no definite statement can be given.

School Statistics (for the year ending August 31., 1875) :—

Pupils enrolled (or registered):

In the winter term	98,402
" " summer term	88,595
" " whole year	119,489
Average attendance, winter	71,935
" " summer	65,251
" " mean, for the year	68,593
Total Receipts	$1,592,858.11
" Expenditures	1,552,583.85

The items of expenditure are as follows:—

For Teachers' Wages	$1,057,242.19
" Fuel and Incidentals	140,130.42
" New School-Houses	135,135.46
" Repairs of School-Houses	77,544.46
" Library and Apparatus	8,262.15
" other school purposes, including cost of supervision	134,269.17
Total	$1,552,583.85

Number of Teachers: —

In winter, males, 721; females, 1,910; total.....2,631

" summer, " 272; " 2,324; " 2,596

Number of *different* teachers employed, *at least*, males, 704; females, 2,307; total, 3,011.

Normal Instruction.—The state normal school, at New Britain, was established in 1849, and opened for pupils in 1850. It is supported by an appropriation of $12,000 a year from the state treasury. The number of students, in 1876, was 180; instructors, 7. The design of the school is strictly professional; that is, to instruct its pupils in the best methods of organizing, governing, and instructing schools, as well as in the various branches pursued in the common schools of the state. Candidates for admission must be at least 16 years of age; must declare their full attention to teach in the public schools of Connecticut, and must pass a satisfactory examination in reading, writing, arithmetic, geography, English grammar, and the history of the United States. The course of study embraces, besides the branches usually taught in the schools, school laws, theory and art of teaching, English literature, vocal music, and drawing. The full course requires two years. This school has a library of about 500 volumes; a collection of models, casts, and apparatus for free-hand drawing; a chemical laboratory, and a philosophical cabinet and apparatus.

Secondary Instruction. — Of this grade are the *high schools* and the *academies.* The account already given of the public schools contains the facts in relation to the county grammar schools, which may be regarded as the high schools of Connecticut from 1672 to 1798. The Colony School in New Haven (1659—62) may be considered the prototype of these schools. In 1798, every school society was authorized to set up a high school; and, in 1856, each town received similar authority. But very few towns have permanently maintained such schools. In many of the larger villages, the highest department of a graded school serves as a high school.

In 1658, Edward Hopkins, who had been governor of Connecticut, died in London, leaving by will a part of his estate to trustees in New Haven, Hartford, and Hadley, Mass., to be used "to give some encouragement in those foreign plantations for the breeding up of hopeful youths, both at the grammar school and college, for the public service of the colony in future times." New Haven and Hartford received each a few hundred pounds from his estate, with which they laid the foundations of the Hopkins grammar schools. These schools date from 1660, though not actually begun till 1664 and 1665. The school at Hartford was united with the high school of that town in 1847, but the Hopkins Grammar School in New Haven has retained its separate existence, though most of its present endowment came from other sources than the Hopkins estate.

In the later years of the 18th century, academies began to be established, and a large number have been incorporated. A general law for their incorporation has been in force since 1838. At present, about 25 academies are in active existence. In the early part of this century, the Plainfield Academy, the Staples Free School, at Easton, and Bacon Academy, at Colchester, were especially prominent, but they have since relatively declined. The most important are now the Episcopal Academy, at Cheshire, the Connecticut Literary Institute, at Suffield, the Norwich Free Academy, the Bulkeley School, at New London, and the Morgan School, at Clinton. The last three named have large endowments. Bowen Academy, at Woodstock, Lewis Academy, Southington, the Guilford Institute, Guilford, and the academies at Durham and Glastonbury are also valuable institutions.

Besides the high schools and academies, there are numerous private schools, especially in the southern and western parts of the state. Many of these are boarding-schools which receive their pupils chiefly from New York and other large cities.

Denominational and Parochial Schools. — There are but few schools of this kind except those established by the Roman Catholics in communities where citizens of that denomination are numerous. In two or three instances, schools thus established have been incorporated into the public school system.

Superior Instruction. — Although no college was established in Connecticut till 1700, the founders of both the original colonies, and especially of New Haven, were ardent friends of collegiate education. But Harvard College for a long time needed and received their assistance. The Connecticut colony appropriated money to establish a fellowship there. In every town a committee was appointed to receive and forward contributions in aid of students at Cambridge. New Haven sent 40 bushels of wheat as one year's contribution. But the purpose to found a college at New Haven, was cherished from the outset, and was never abandoned. At a town meeting held early in 1648—less than 10 years after the first settlement—, the town directed a committee, appointed to dispose of vacant lots, to "consider and reserve what lot they shall see meet and most convenient for a college, which they desire may be set up so soon as their ability shall reach thereunto." The subject was repeatedly discussed both in meetings of the town and in the colonial legislature, but the want of means prevented the gratification of their desire. In 1659, a "colony school" was set up, in the hope that it might in time become a college, but it was continued only three years. At length, in 1699, a plan was devised for establishing the long desired college. The leaders in the movement were the clergymen of the colony. Ten of these were selected to act in behalf of the whole number, to found, erect, and govern a college. In 1700, they performed the duty assigned them, and the "collegiate school" was begun. The next year, the legislature bestowed on it a charter and an annual appropriation of 120 pounds for its support. It was first located at Saybrook, but the president (then called rector) lived at Killingworth (now Clinton) a few miles distant, and the students pursued their studies there under his direction till his death in 1707. Afterward, the senior class was instructed by his successor at Milford, the other classes remaining at Saybrook, where the successive annual commencements were held. In 1716, the trustees decided to remove the school to New Haven, and after much contention this was accomplished the following year. One year later (1718), a generous and timely gift from Elihu Yale induced the trustees to give the newly erected building the name of the present institution, Yale College. (See YALE COLLEGE.)

Trinity College, at Hartford, was chartered as Washington College, in 1823; and instruction was begun in 1824. The name was changed in 1845. (See TRINITY COLLEGE.) In addition to these, there is the Wesleyan University, at Middletown, which was founded in 1830; chartered in 1831. (See WESLEYAN UNIVERSITY.)

Professional and Scientific Instruction.—Under this head are included *Theological Schools*, *Law Schools*, and *Scientific Schools*, of which the following is an enumeration: The Theological Department of Yale College was organized in 1822. For the year 1875—6, it had 99 students. The Theological Institute of Connecticut was founded at East Windsor, in 1834, and was removed to Hartford, in 1865. In 1876, the number of students was 16. The Berkeley Divinity School was organized in 1851 as the Theological Department of Trinity College. In 1854, it was removed to Middletown, and was incorporated with its present designation. It had 39 students in 1876. In 1784, the Litchfield Law School was established by Judge Reeve, and it soon became the foremost in the U. S., having students from all parts of the country. It was continued about half a century. The Law Department of Yale College was separately organized in 1826, though no class was formally graduated till 1843. The number of students, in 1876, was 76. The Medical Department of Yale College was organized in 1813. The number of students, in 1876, was 50. The Sheffield Scientific School of Yale College was begun in 1846, as the Department of Philosophy and the Arts, and graduated its first class in 1852. Its rapid growth has been due mainly to the liberality of the gentleman whose name it bears. In 1863, the legislature granted to it the income ($8,100) derived from lands given by Congress, the previous year, to provide colleges for the benefit of agriculture and the mechanic arts." The school had 224 students for the year 1875—6. The School of the Fine Arts in Yale College has been quite recently established, and has as yet but few pupils.

Special Instruction.—The American Asylum for the Deaf and Dumb was established at Hartford in 1816, being the first of the kind on the Western Continent. It receives pupils from all the New England States. The average number is usually about 225. The Whipple Home for Deaf-mutes, at Mystic River, makes a specialty of teaching the deaf and dumb to talk, in which it is remarkably successful. The State Reform School for Boys, at West Meriden, was established in 1851, and opened in 1854. It has received in all about 2,350 pupils, and has an average number of about 300. The Industrial School for Girls, at Middletown, was incorporated in 1868, and received its first pupil in January 1870. It has an average number of from 60 to 80 pupils, and receives from the State $3 per week for each pupil. It is designed to be a reformatory institution. The Soldiers' Orphan Homes, two in number, were opened 10 or 12 years ago, at Darien and Mansfield. As the class of children for which they were designed is now mostly beyond school age, they cannot be much longer continued on the original basis, but the school at Darien has already been somewhat transformed. The School for Imbeciles, at Lakeville, was incorporated in 1861, though it had been previously carried on as a private institution. It receives from the state treasury an annual appropriation of $7,000.

Educational Literature.—The chief works on the schools of the state are the Report of Henry Barnard, Superintendent of Common Schools, for 1853, which contains a carefully prepared history of education in Connecticut; and historical accounts of particular institutions which have been published from time to time. Besides these, histories of Yale College have been prepared by several persons; and a full account of Trinity College and the Berkeley Divinity School is contained in Dr. E. E. Beardsley's *History of the Episcopal Church in Connecticut.* The educational journals are very important. The Connecticut Common School Journal was first issued by Henry Barnard, in August, 1838. Four volumes, 4to, were published in the next 4 years, and 4 vols. more, previous to 1854. From 1854 to 1866, inclusive, 13 vols., 8vo, were issued, and after an interval of 4 years 4 vols. more (1871—74), the last two being 4to. The whole number of volumes issued is 25. In January, 1875, all the educational journals of New England were combined into the *New England Journal of Education*, published weekly in Boston. The *Journal of Education* was begun by Henry Barnard, in 1855, and is still continued. The series comprises 27 large 8vo volumes. (See BARNARD, HENRY.)

CONSCIENCE, Culture of. The feeling of moral obligation, the conviction that certain actions are right and others wrong, the sense of duty, the moral principle, or by whatever other phrase of similar signification we may define *conscience*, is the most important object of culture in every department and stage of moral education. The strength of this principle, as an active element of character, differs greatly in different individuals, whether children or adults. As a general fact, however, children are influenced but very slightly by a sense of right or duty; they are acted upon by a different class of motives. The desire of sensuous enjoyment, the love of approbation, emulation, self-will, the hope of reward, and the fear of punishment, are the usual means by which youthful minds are swayed, and their actions controlled. The appetites are strong; the moral sentiments, weak. Hence, to address the conscience of a child as a ruling principle would be a great error; perhaps, a disaster. Still, children should be treated as possessing at least the germ of conscience; and they should early be habituated to scan their own conduct as well as that of others, and apply to it a certain standard of moral rectitude. However imperfect this standard in a child's mind may be, much will be gained when we have induced him to ask, in regard to any of his actions, "Is it right?" The enlightenment of conscience is much easier than its development; to one who is deeply impressed with a sense of duty, a knowledge of specific right and wrong will be very readily acquired. It should be borne in mind that, while the child is really restrained by the lower motives of conduct, such as those above enumerated, the conscience is to be steadily but carefully addressed. Thus, if a pupil, whose love of approbation is strong, has learned a difficult lesson simply to please his teacher, it is right to accord him all the praise which he craves as the reward of his conduct; but let not the teacher fail to impress upon his mind, at the same time, that this praise is given because the action performed is good—is right; so that his mind may be drawn from his overweening desire for the approbation of others, and gradually led to appreciate more highly the approbation of his own conscience; and so in respect to all the lower incentives. If the child is punished for a fault by an angry teacher or parent, he will rather dread the anger than be impressed with the wrongfulness of his conduct; and, if sly and deceitful, the only result of the punishment will be to render him more careful to conceal than to avoid similar wrong-doing in the future. Hence, the interposition of the teacher's personality in connection with either reward or punishment is an obstacle to the moral improvement of the pupil; because it diverts his attention from the character of his conduct, as good or bad in itself, to an exclusive consideration of its effects upon the mind of the teacher, as producing praise or censure. Some thoughtless teachers punish their pupils for not telling of each other's offenses, when they should be glad to perceive an exhibition of such a sense of honor, and should rather encourage and commend it. Of course, if a pupil who is strenuous in his refusal to act the part of a tale-bearer, as mean and wrong, could be convinced that his duty demanded that he should make known the wrong-doer, he would at once yield; but, after a simple statement of the case, he should be permitted to exercise his conscience, without any violence or threats being brought against it. A high standard of moral excellence in a child is just as striking an instance of precocity, as great intellectual power and attainments; and is, perhaps, as much to be discouraged. "Be content," says Herbert Spencer, "with moderate measures and moderate results. Constantly bear in mind the fact that a higher morality, like a higher intelligence, must be reached by a slow growth; and you will then have more patience with those imperfections of nature which your child hourly displays. You will be less prone to that constant scolding, and threatening, and forbidding, by which many parents induce a chronic domestic irritation, in the foolish hope that they will thus make their children what they should be."

The conscience is not to be cultivated by simply giving moral precepts. "Moral education," says Dymond, "should be directed, not so much to informing the young what they ought to do, as to inducing those moral dispositions and principles which will make them adhere to what they know to be right." The highest success in this is achieved when the pupil is seen to be willing to make self-sacrifice, to practice self-denial, in order to do what he feels to be right. This point of moral excellence having been reached, the individual may, with entire safety, be allowed to control his own actions, with the assurance that he will not, in any circumstance of life, go far astray.

The basis of moral rectitude has not here been considered; nor is it necessary to plunge into any speculations as to what constitutes that discriminative power between right and wrong which is a part of the original constitution of the human mind. It may undoubtedly be strengthened by religious training of a proper character; and hence, such training constitutes a very important agency in the culture of the conscience. "Parents," says Hartley, "should labor, from the earliest dawnings of understanding and desire, to check the growing obstinacy of the will, curb all sallies of passion, impress the deepest, most amiable, reverential, and awful sentiments of God, a future state, and all sacred things." (See Moral Education, and Religious Education.)

CONSTITUTION OF U. S., a branch of instruction forming part of the course of studies pursued in the common schools of many of the states of the Union. As the object of common-school education is chiefly to prepare for the duties of citizenship, it is usually deemed essential to impart a knowledge of the organic law of the nation, as the foundation of those acquirements in political science which every citizen needs in order to be able to discharge his duties with proper intelligence and discrimination. This instruction, besides making the pupils familiar with the particular instrument studied, may be made the basis for much useful information in regard to the elementary principles of jurisprudence and governmental organization. An analysis of the various provisions pertaining to the three great departments of the government, showing their respective powers and limitations of power, with an explanation of the underlying principles, cannot but prepare the youthful mind for more advanced studies of this kind, besides being the means of a particular culture of the reason and judgment, of very great value. The practical usefulness of the knowledge thus imparted, particularly in boys' schools, is scarcely exceeded by that of any other branch of instruction usually included in a common-school course. Many valuable school text-books on this subject have been compiled; besides which, those designed to teach the history of the United States generally comprehend also, as an appendix, the Constitution of the United States, arranged and adapted for school study.—See E. D. Mansfield, *American Education* (N. Y., 1851); and (as books of reference) Story, *On the Constitution of U. S.* (N. Y.); Kent, *Commentaries on American Law* (Boston); Mansfield, *Political Manual* (N. Y.); Nordhoff, *Politics for Young Americans* (N. Y.); Pomeroy, *Constitution and Law* (N. Y.); Sheppard, *Constitutional Text-Book*, and *First Book of the Constitution* (Phila.); Stearns, *Constitution of U. S.*, with Concordance and classified Index (N. Y.); Townsend, *Analysis of Civil Government* (N. Y.); Andrews, *Manual of the Constitution of the U. S.* (Cin., 1874).

CONVENT SCHOOLS. The convents of the Christian church were originally founded from ascetic and religious, not from literary and educational motives; and, for a considerable time after their first establishment, but little value appears to have been attributed by their inmates to literary culture and education. Basil of Caesarea was one of the first who recommended the reception of children into convents for the purpose of being educated. The recommendation was complied with by many Eastern convents. Chrysostom, as well as other bishops, expressly ordered that convent schools should be opened also to lay pupils, and admonished parents to send their children for ten or more years to convents, in order that they might be brought up in the principles of piety. Next to the East, the convents of southern Gaul, Ireland, Scotland, and England became the seats of Christian scholarship. Lerinum, in southern Gaul, had an ecclesiastical seminary from which, in the 5th and 6th centuries, many authors and scholars proceeded; and, in the British islands, many convent schools which imparted theological as well as other instruction, were especially famous for the number of missionaries whom they educated.

A new period in the history of convent schools begins with the foundation of the Benedictine order. By introducing a strict monastic rule, Benedict not only developed the idea and organization of monasticism, but also made monastic institutions one of the strong pillars of the church. When, therefore, Benedict and his order added the instruction of novices, as well as of other scholars, to the regular work of the convent, he did more for the development of education among the new states emerging from the ruins of the Roman empire, than any other man up to the time of Charlemagne. (See Benedictines, Schools of the, and Charlemagne.) From the 8th to the 11th century, the Benedictine schools, and their rivals, the cathedral and collegiate schools (see Cathedral and Collegiate Schools), were almost the exclusive representatives of Christian education in western Europe. Some of these schools, especially in Germany, France, and England, attained a high degree of prosperity, and gave a powerful impulse to the progress of education by the revival of classical studies. At the time of Gregory VII., the convent schools began to decline. The new ideas set afloat by the crusades, found the course of instruction in the Benedictine schools too narrow and one-sided; Franciscans, Dominicans, and other mendicant orders dislodged the Benedictines in the affections of the lower classes of society, and, therefore, gathered in their schools a large number of scholars who otherwise would have flocked to the Benedictines; several popes, as Innocent III., ostentatiously evinced their preference for the cathedral schools; and, finally, the rise of the universities displaced the convent schools from their rank as the highest class of educational institutions. Moreover, the town schools soon began to make a powerful competition for public favor, and created a demand for instruction in secular subjects, which led to the foundation of new religious orders; and these, like the Hieronymians, attempted a new departure in the organization of convent schools. The success of the Protestant movement in Germany and in other European countries called forth, in the Roman Catholic church, new religious orders, which regarded the establishment of schools superior to those of the Protestants as the surest way to obtain a controlling influence over the rising generation, and thus to reconquer the ground which had been lost by the church. Among these orders, the Jesuits, the Piarists, the Ursulines, and the many congregations of school brothers and school sisters are the best known. In the eighteenth century, the convent schools lost ground in consequence of the greater influence which the state governments exercised in the organization and supervision of schools. They were obliged to submit in many states to the legislation of the state government on school matters; and, by the suppression of the order of the Jesuits, were for a long time deprived of their most illustrious representatives. In the nineteenth century, the convents, though fiercely attacked in many states, and totally suppressed in some, have found for their schools a very large patronage. This is particularly the case with the female convent schools, which count among their pupils many thousands of Protestants.

Convent school education is based on the principle that religion should have a predominating influence in the education of the child, and that a complete retirement from the world is conducive to the formation of a Christian character. The features which distinguish them as a class from other schools, consist chiefly in the peculiar methods of their management and administration. The course of instruction presents no marked points of difference from that pursued in other schools of the same grade, comprising, in England and the United States, as the prospectus of these institutions generally informs the public, "all the usual branches of a sound English education," with French, to which a greater prominence is given than in the majority of other schools. Instrumental and vocal music, and drawing are carefully attended to as necessary accomplishments; and, in many institutions, the pupils have also the "advantage of the best masters for dancing." The superior of each of these schools is expected to exercise special care in the supervision of the deportment of the pupils, and the greatest possible attention is given to their religious and moral training. The religious atmosphere in which the students live, and the frequency of the devotional exercises, interwoven with the studies, are calculated to produce profound and lasting impressions; and it is but natural that a considerable proportion of Protestant pupils reared in Catholic convents, should, in after life, embrace a religion under the direct influence of which they received their early education. It is equally natural that Protestant churches should be greatly opposed to convent education, and should earnestly warn Protestant parents against placing their children in institutions which, in so many cases, while affording a thorough secular education, divert the minds of their pupils from the religious faith of their parents.

CONVERSATION has many claims to consideration as an agency in education, both in an active and passive sense. The child may not only receive information by listening to the discourse of his elders and superiors, but is taught, through the imitative faculty, to think and speak in a correct, easy, familiar, and pleasing manner. The mere student of books cannot mingle in society with ease and grace; having been a recipient simply, he has no habit of dispensing information. He is, as it were, an intellectual bank of deposit, but has no circulating medium. His ideas are either imperfect for the want of an interchange with those of other minds, or they are vague and misty for the want of that practical definition which can alone result from clothing them in familiar language. His views are one-sided and narrow, because they have not been corrected by contrast with those of others. "Conversation," says Bacon, "makes a ready man;" that is, the mind, by the constant use of its stores of knowledge, applies a practical rule in making its acquisitions, and selects that which is available and useful. It does not indulge in mystic speculation, but adapts itself to the demands of common sense. The solitary philosopher may, in his seclusion, develop ingenious hypotheses and comprehensive theories; but it is only when he comes forth and discourses with his fellows that his philosophy becomes of any practical use. Young persons should be constantly practiced in conversation with each other, or with their elders, upon the subjects of their studies, as well as the incidents of their experience; they should be encouraged to talk as well as to listen, both for the improvement of their power of ready expression and for the general culture of their minds. The mere reading of books, without talking or writing, may make a learned man, but will never produce a really useful one. Flippancy, captiousness, conceitedness, and forwardness in advancing opinions, or in disputing about them, should of course be repressed, and humility and modesty be cultivated; candor should always be encouraged, as the best guide to knowledge. In this way, conversation will be not only an important agent in intellectual culture, but one of the most effective means in social education, that is, in training the individual for useful and agreeable intercourse with his fellows. E. D. Mansfield, in *American Education*, thus sums up the advantages of conversation as a means of education: "(1) The rapidity and ease of conversation enables an intelligent person to communicate information, or suggest ideas, or direct attention, with a readiness and a velocity which it is impossible to do by reading; (2) It may be done more fully and more accurately, because there is an opportunity to ask questions, to express different shades of thought, and to illustrate in different ways; (3) Conversation suggests rapidly numerous ideas which can only be expressed in a very limited manner by written instruction; and (4) Such instruction may thus draw out a sympathy of minds, by which the pupil is enlivened, is led forward without labor, and ascends, enlarges the circle of ideas, loves the pursuit of knowledge, and inquires into the reason of things, without ever suspecting that a task has been put upon him."

Conversation brings into play a great variety of faculties, which without it are quite apt to rust from disuse; but in order to exercise its best influence, it must be spontaneous and unrestrained, except by a due regard to the amenities of social intercourse. It then becomes the genuine inspirer of wit, fancy, and sentiment, which find their best and truest exercise in the gladsome communion of congenial minds. But to have this effect, it must be an interchange, not a one-sided harangue; nor must it be permitted to degenerate into dogmatism or debate. The true art of conversation, apart from its intellectual requirements, corresponds with the art of politeness, the basic principle of which is, to try to please others by making them pleased with themselves. Hence, however much we may differ in opinion with others, we should still treat their opinions with respect; and if we are obliged to controvert them, we should do it rather by suggesting views and considerations in opposition, than by anything bordering on dogmatism or denunciation. Candor, charity, and courtesy alike suggest this course, and will be much more apt to produce conviction than positive assertion or heated debate. Conversation has been compared to "a ball, which is thrown from player to player without being allowed to drop, and thus keeps each one in play." Carried on in this way, and upon this principle, it constitutes an educational instrumentality of peculiar value and importance.

CONVERSATIONAL METHOD. This refers to the mode of giving instruction, in which the lessons, instead of being formal recitations, exercises, explanations, or lectures, consist of a familiar discourse by the teacher, interspersed with questions or remarks by the pupils; that is to say, in which the lessons partake of the character of conversations, both as to the manner of presenting the subject and the style of language employed. This mode of teaching is especially adapted to young children, because it affords the teacher a constant opportunity to appeal to their intelligence and experience, and to employ the simplest colloquial expressions. Besides, the utmost freedom being given to the pupils, they are enabled to show by their questions and remarks to what extent and in what respect they need special instruction and information. In order to arouse and sustain the pupils' interest, their attention is called to such facts in connection with the subject as, although quite obvious when shown or explained, are usually overlooked by children, who are generally but superficial observers before being trained to close attention and careful investigation. In object teaching, the lessons should always be conversational, the teacher saying only enough to lead the pupils to observe, and to talk freely about what they notice. As examples of the conversational method we may refer to the beautiful colloquial lessons contained in some of the works of Dr. Aiken and Mrs. Barbauld. (See *Evenings at Home*, edited by Cecil Hartley.) That on *The Leguminous Plants* is an excellent example; although the style is by no means so simple as that which would be used in an actual oral lesson. The lesson is given by the tutor to two pupils, *George* and *Harry*, and commences with an exclamation of the former, who has approached a bean-field, and proceeds as follows:—

G. What a delightful scent!

H. Charming! It is sweeter than Mr. Essence's shop.

T. Do you know whence it comes?

G. O—it is from the bean-field on the other side of the hedge, I suppose.

T. It is. This is the month in which beans are in blossom. See—the stalks are full of their black and white flowers.

H. I see peas in blossom, too, on the other side of the field.

G. You told us some time ago of grass and corn [wheat] flowers; but they make a poor figure compared with these.

T. They do. The glory of a corn-field is when it is ripe; but peas and beans look very shabbily at that time.

The blossoms of the bean and pea are then brought, and compared by the pupils; and the lesson proceeds.

T. Do you think these flowers much alike?

H. O no—very little.

G. Yes—a good deal.

T. A little and a good deal! How can that be? Come, let us see. In the first place, they do not much resemble each other in size or color.

G. No—but I think they do in shape.

T. True. They are both irregular flowers, and have the same distribution of parts. They are of the kind called *papilionaceous*; from *papilio*, the Latin word for butterfly, which insect they are thought to resemble, etc., etc.

All the characteristics are thus successively unfolded in this familiar manner, the explanations of the teacher being interspersed with the remarks of the pupils. Hooker's *Child's Book of Nature* presents another excellent illustration of the conversational mode of instruction, to which may be added many others. It is difficult, however, fully to show this method in a book; since its characteristics are freedom and spontaneity, the pupil talking in a child-like manner, and the teacher adapting his words and modes of illustration to the condition of the pupil's mind, as shown during the lesson. This method of instruction, in the elementary stages, is far more effective than that which is given by means of text-books, much of the language of which usually needs to be translated into such as is suitable to the child's comprehension.

COOPER INSTITUTE, or Cooper Union. See COOPER, PETER.

COOPER, Peter, an American philanthropist and the founder of the "Union for the Advancement of Science and Art," a large and important institution of learning in the city of New York, commonly called after its founder "Cooper Institute," was born in New York, Febr. 12., 1791. He was apprenticed at the age of seventeen to the trade of coach-making, and soon rose to a conspicuous position among the manufacturers of the United States. The development of American industry, has continued, throughout his long life, to be an object of his patriotic aspirations; and, in his later years, there has been hardly a question relating to the industrial interests of the country, in the discussion of which he has not taken a prominent part. But the one great subject which, more than any other, engrossed the attention of his riper years, was the education of the industrial classes. The value of a good education he prized all the more highly, because during his youth his own education had been sadly neglected. Only for a single year had he been sent to school; all the varied knowledge acquired by him since, was the fruit of laborious self-education. As an earnest friend of education, he took an active part in the development of the public-school system of the city of New York. He was a trustee and vice-president of the Public School Society, and after this society had been merged in the Board of Education, became a school commissioner. His effort to improve the deficient education of his youth, and the high opinion which he held of the value of education, early inspired him with the wish to found a grand institution for the gratuitous instruction, chiefly of the industrial classes of his native city. "I determined," he says himself, "if ever I could acquire the means, I would build such an institution, as would open its doors at night with a full course of instruction, calculated to enable mechanics to understand both the theory and the most skillful practice of their several trades; so that they could not only apply their labor to the best possible advantage, but enjoy the happiness of acquiring useful knowledge—the purest and most innocent of all sources of enjoyment. By this means, I hoped to contribute to the elevation and the happiness of the industrial classes to which I belonged. Finally, my plan also provided for a school of art suited to the wants of females, during the day, with a reading room and library open to both sexes, from eight o'clock in the morning until ten o'clock at night." This design was carried out by the establishment of the "Cooper Union for the advancement of Science and Art," after the erection of a magnificent building occupying an entire block between Third and Fourth avenues and Seventh and Eighth streets. The deed of trust devotes the institution, with all its rents, issues, and profits, to the instruction and elevation of the working classes of the city of New York. The original cost of the building when conveyed to the trustees was $630.000. The aggregate receipts, from the opening of the institution in 1859, to Jan. 1., 1875, amounted to $572,291.27, of which $502,720.69 were from rents. $31,934.74 from donations, and $37,635.84 from sundry other sources. The expenditures for carrying on the several departments from 1859 to 1875, were $583,840.27, and the total expenditures on building and education to Jan. 1., 1875, $1,213,840.85.

The course of instruction, as indicated above in the words of the founder, has been gradually and steadily developed; and the Cooper Union, at present, takes a high position among the industrial schools of the country. A thorough and practical course of mathematical and scientific studies in connection with all branches of practical engineering and chemistry, forms a curriculum of five years, which entitles the student to the diploma and the medal of the Cooper Union. This course is pursued in classes of free instruction given every evening of the week, except Sunday and Saturday. The course is open to both sexes. It is entirely free, as is all the instruction given in every department of this institution. The classes of the scientific department, are held in the evenings, when the young people who attend can get freedom from the daily occupations in which most of them are engaged. In all branches of study, however, both in the scientific and in the art departments, a certificate of proficiency is given to any pupil who has made a certain degree of progress in any special branch of study, independently of the diploma given for proper attainments made in the whole course of studies that belong to the curriculum. The free classes in art are held both in the day-time and in the evening. The day classes are exclusively for women, and the young men attend only the evening classes. In these, may be studied, under careful and thorough instruction, all those methods of construction and design that lie at the basis of most of the useful arts:—Perspective, mechanical, and architectural drawing, drawing from cast and life, and modeling in clay. The practical application of these elementary arts of design, is not left entirely to the student; but classes are organized also for drawing and engraving on wood, and in the various departments of photography, such as pen-and-ink drawings from which negatives are taken, the retouching of negatives, and painting or crayon drawing on positives. It is contemplated to introduce other applications as soon as practicable, so as to bring every department of elementary instruction close to the practical life and remunerative employment of each student, while he or she remains at school, or immediately on leaving it. The corps of instructors, in 1875, numbered 20, of whom 3 were ladies, and the number of pupils was 2,878, a greater number than in any previous year. The trades and occupations most largely represented among the pupils of the Union were the clerks and bookkeepers (369), machinists and iron-workers (306), carvers and turners (293), engravers and lithographers (261), teachers and students (140). The free reading room was visited during the year 1874—1875 by 581,798 persons, a daily average of nearly 2,000. In the library there are about 16,000 volumes, and the books drawn by the readers numbered 129,655. The board of trustees have also established a department of consultation to assist the inventors and manufacturers of new processes; and, during the year 1874 to 1875, more than 350 persons applied for advice. As the popular lecture is now recognized in America as a standing institution, the trustees have provided that two courses of lectures, from six to twelve each, shall be annually given in the large hall of the Cooper Union, during the course of each six months, on subjects connected with social or physical science. Men of a high class are selected as lecturers, who being distinguished in their several departments and well-known, draw large audiences, fully taxing the capacity of the hall, though it accommodates more than 2,000 people. Besides, there are several smaller halls in the building of the Cooper Union, in which free lectures are given by the several professors on chemistry, natural philosophy, English literature, elocution and rhetoric, art, and artistic economy.

COOTE, Edward, a noted English teacher, and the author of the *English School-Master*, one of the most famous of school-books, first published in London, in 1627. A good idea of the character and contents of this quaint old book may be obtained from the title-page, of which the following is a copy:

The
ENGLISH
School-Master.
Teaching all his Scholars, of what age so ever,
the most easy, short, and perfect order of
distinct Reading, and true Writing
our English-tongue, that hath
ever yet been known or
published by any.

And further also teacheth a direct course, how many
unskilful persons may easily both understand any
hard English words, which they shall in Scriptures,
Sermons, or else-where hear or read; and also be made
able to use the same aptly themselves: and generally
whatsoever is necessary to be known for the *English*
speech; so that he which hath this book only needeth
to buy no other to make him fit from his Letters to
the *Grammar-School*, for an *Apprentice*, or
any other private use, so far as concerneth
English: And therefore it is made
not only for Children, though the
first book be meer childish
for them, but also for other;
especially for those that
are ignorant in the
Latin Tongue.
In the next page, the *School-Master* hangeth forth his
Table to the view of all beholders, setting forth some
of the chief Commodities of his profession.
Devised for thy sake that wantest any part of this
skill; by *Edward Coote*, Master of the Free-School
in Saint *Edmund's-Bury*.
*Perused and approved by publick Authority; and
now the 40 time Imprinted: with certain Copies
to write by, at the end of this Book, added.*
Printed by A. M. and R. R. for the company of Stationers
1680.

The following verses, extracted from this book, give a picturesque idea of Coote's mode of school management and discipline:

The School-master to his Scholars.

"My child and scholar take good heed
unto the words that here are set,
And see thou do accordingly,
or else be sure thou shalt be beat.

First, I command thee God to serve,
then, to thy parents, duty yield;
Unto all men be courteous,
and mannerly, in town and field.

Your cloaths unbuttoned do not use,
let not your hose ungartered be;
Have handkerchief in readiness,
wash hands and face, or see not me.

Lose not your books, ink-horns, or pens,
nor girdle, garters, hat or band,
Let shoes be tyed, pin shirt-band close,
keep well your hands at any hand.

If broken-hosed or shoe'd you go,
or slovenly in your array,
Without a girdle, or untrust,
thou you and I must have a fray.

If that thou cry, or talk aloud,
or books do read, or strike with knife;
Or laugh, or play unlawfully,
then you and I must be at strife.

If that you curse, miscall, or swear,
if that you pick, filch, steal, or lye;
If you forget a scholar's part,
then must you'sure your points untye.

If that to school you do not go,
when time doth call you to the same;
Or, if you loiter in the streets,
when we do meet, then look for blame.

Wherefore, my child, behave thyself,
so decently, in all assays,
That thou may'st purchase parents' love,
and eke obtain thy master's praise."

See Barnard, *Educational Biography*, s. v. *Ezekiel Cheever*.

COPY-BOOKS. See Penmanship.

COPYING, in school education, has several applications: (I) Writing or drawing by imitation from an original, which constitutes an essential part of primary instruction, since the eye must be trained to the observation of forms, as well as the hand to execute them. Hence, the first lessons in writing largely consist in practicing the pupil in copying (1) the elements of letters,—straight lines, curves, etc.; (2) letters; (3) words; and (4) sentences. In connection with this copying, much incidental instruction is required, all of which, however, is addressed to the faculty of imitation. (See Penmanship.) Rudimentary instruction in drawing must be of a similar character, beginning with lines in various positions and relations to each other, then passing to simple figures, and thence to more complex forms; but, in all these, it is the eye that must be trained through the faculty of imitation, simultaneously with the gradual acquisition of manual skill by means of constant practice. (See Drawing.)

(II) The copying, from books, of selected passages in prose and poetry is a very useful exercise, if properly and systematically performed. Of course, this belongs to a later stage of elementary instruction, that is, after the pupil has learned to write with some degree of facility; and, when the utmost accuracy is insisted upon, it will be found an effective means of imparting habits of correct spelling, punctuation, and the use of capital letters; and will also have a very beneficial effect upon the pupil's style, impressing upon his memory a great variety of words and phrases, and thus aiding him to acquire fluency and accuracy of expression. It was on this principle that Demosthenes copied the history of

Thucydides so many times; since he desired to catch the style of composition peculiar to that great writer. What is particularly necessary in the use of language, both oral and written, is practice; and, without superseding exercises in dictation and composition, both of which are indispensable, copying, as here described, should be treated as an essential part of the school work.

(III) The term *copying* is also applied to the reprehensible practice, often found to exist in classes and schools that are imperfectly disciplined, of one pupil's transcribing by stealth what has been written by another. Weak or idle pupils will, if they are permitted, in this way avail themselves of the work of their neighbors, thus failing to receive the benefits of the instruction given to the class, and, at the same time, deceiving the teacher. The effects of this practice are, therefore, bad intellectually and morally, and all necessary vigilance should be exercised by the teacher to prevent or suppress it.

CORDERIUS, Mathurin (*Fr. Cordier*), a celebrated Protestant school-teacher, born in France, in 1479, and died in 1564. One of his most distinguished pupils was Calvin, who dedicated to him one of his works. He published several text-books for schools, among which the best known is *Colloquia Scholastica* (*Scholastic Colloquies*), published in 1564. This work was long and extensively used in giving instruction in the Latin language; and, indeed, is one of the most noted school-books ever published.

CORNELL COLLEGE, at Mount Vernon, Iowa, under the auspices of the Methodist Episcopal Church, was founded in 1857 for the education of both sexes. The institution has three spacious buildings. The college campus, embracing about twenty acres, is beautifully designed by nature, and commands one of the finest prospects in the country. The college possesses one of the largest and best collections of minerals and fossils in the West, a chemical laboratory, and a library of over 4,000 volumes. The college property is valued at $65,000, and the productive funds amount to $40,000. Free tuition is given in the preparatory and collegiate departments to disabled soldiers and orphans of soldiers. Five scholarships, endowed with $500 each, have been founded for the purpose of educating destitute young men preparing for the ministry. The beneficiaries are exempt from all charges of tuition and incidental fees. There are a preparatory department, with classical and scientific courses, and a collegiate department, with a classical course, leading to the degree of Bachelor of Arts; a scientific course, leading to the degree of Bachelor of Science; and a civil engineering course, leading to the degree of Bachelor of Civil Engineering. The young men are required to practice military drill under an officer of the army detailed by the secretary of war as professor of military science and tactics; a system of light gymnastics has been provided for the young women. In 1873—4, there were 25 instructors, and 405 preparatory and 54 collegiate students. The Rev. Wm. F. King, D. D., is (1876) the president.

CORNELL UNIVERSITY, at Ithaca, N. Y., was chartered in 1865, and opened in 1868. It was named in honor of Ezra Cornell, of Ithaca, who gave for its establishment $500,000 and over 200 acres of land, to be used as a farm and as a site for the university buildings. He has since made other donations amounting to several hundred thousand dollars. The state transferred to the university its agricultural land-scrip, granted by Congress, representing 990,000 acres, the proceeds to form an endowment for general and industrial science and art. The grounds lie a short distance east of the village, nearly 400 feet above Cayuga Lake, and command a splendid view. The principal buildings are the South Building, North Building, McGraw Building, Sibley College, Laboratory Building, Cascadilla Place, University Chapel, and Sage College for women (the gift of Henry W. Sage, of Brooklyn), who by the action of the trustees, in 1872, are admitted to the university on the same terms and conditions as men. The value of the buildings, grounds, and apparatus is $700,000; the amount of productive funds, $1,153,999. The yearly income is $107,500. State students to the number of 128 (one from each assembly district of New York) may be admitted each year. These state students are selected, by yearly competitive examinations, from the various public schools and academies maintained by the people of New York. For state students, for students in agriculture, and for all resident graduates pursuing post-graduate courses, there is no charge for tuition or for the use of the library and collections; but for all others the tuition fee is $20 a term, or $60 a year. Some of the students support themselves wholly, or in part, while pursuing their studies, by laboring on the farm, in the machine-shops, or in the printing establishment, for which they receive from the university the usual rate of wages. Skilled labor is mostly in demand.

The points in which this university differs from most of the other institutions of learning in the United States may be summed up, in brief, as follows: (1) The addition to the ordinary governing faculty of non-resident professors and lecturers, some of whom deliver each year courses of lectures upon subjects in the investigation of which they have acquired a high reputation; (2) Liberty in the choice of studies; (3) The prominence given to studies which are practically useful; (4) The absence of a marking system determining the relative rank of each student in his class; (5) The non-sectarian character of the institution.

The instruction is comprised in four great divisions: general courses, optional courses, special courses, and post-graduate courses. The general courses are four in number, namely: in arts, in literature, in science, in philosophy. The course in arts, leading to the degree of Bachelor of Arts, extends through four years. It includes the Greek and Latin languages, and is similar to the usual academic course in the other colleges and universities of the United States. During the first year, no option is allowed in the choice of studies. In the second year, everything is optional, except Greek, Latin, and the exercises in elocution and rhetoric. During the third and fourth years, everything is optional, except the studies in the departments of philosophy and letters. During the first and second years, Latin and Greek are required four times a week each; and after that they may be pursued through the two remaining years so as to occupy twelve out of the fifteen hours of recitation per week. The course in literature, leading to the degree of Bachelor of Literature, extends through four years. It differs from the course in arts in requiring no Greek, and is characterized by a larger amount of attention to the modern languages and English literature. The course in science, leading to the degree of Bachelor of Science, extends through four years, and includes five hours a week, during the last year, devoted to some one science as a specialty. Its peculiar features are the study of mathematics, of the French and German languages, and of the historical, physical, moral, and political sciences. The course in philosophy, also of four years, is designed to be a scientific course of a higher grade than the preceding. Latin is required for admission, as in the courses in arts and literature. It leads to the degree of Bachelor of Philosophy. Optional courses are those which the student may select for himself. In no course is it necessary, for the attainment of a degree, that the studies should be followed exactly in the prescribed order; and, in the general courses, equivalents are accepted, in some cases, for the studies indicated, provided they are of the same general character. The special courses differ from the general courses, not only in the studies which they include, but also in the important fact, that while the general courses have chiefly in view the culture of the mind, the special courses aim rather to fit students more immediately for some one of the departments of productive industry. There are eleven special courses; namely, (1) agriculture, with a full course of four years, leading to the degree of Bachelor of Agriculture; (2) architecture, with a full course of four years, leading to the degree of Bachelor of Architecture; (3) chemistry and physics; (4) civil engineering, with a full course of four years, leading to the degree of Bachelor of Civil Engineering; (5) history and political science; (6) languages, comprising three schools—of the ancient languages, of living Asiatic and oriental languages, and of modern languages; (7) mathematics and astronomy; (8) mechanic arts, with a full course of four years, leading to the degree of Bachelor of Mechanical Engineering; (9) military science; (10) natural history, comprising the school of botany, the school of geology and palæontology, and the school of zoölogy; (11) philosophy and letters, with a school of philosophy and a school of letters, the latter having a department of Anglo-Saxon and English literature, and a department of rhetoric and general literature. No regular post-graduate courses have been arranged. The degree of Bachelor of Veterinary Science is conferred on students who pursue a four years' course in that study in the agricultural department. The advanced degrees of Master of Arts, Master of Science, Doctor of Philosophy, Civil Engineer, Doctor of Veterinary Medicine, and Architect, are conferred on holders of corresponding graduate degrees upon fulfilling certain prescribed conditions, and passing an examination. The general faculty is divided into 13 special faculties. The special faculties are those of (1) agriculture, (2) architecture, (3) chemistry and physics, (4) civil engineering, (5) history and political science, (6) ancient and Asiatic languages, (7) North European languages, (8) South European languages, (9) mathematics, (10) the mechanic arts, (11) military science, (12) philosophy and letters, (13) natural history. There are professorships of history; South European languages; moral and intellectual philosophy; North European languages; agricultural chemistry; comparative anatomy and zoölogy; English literature (non-resident); English history (non-resident); veterinary medicine and surgery; constitutional law (non-resident); general, economic, and agricultural geology; botany, horticulture, and arboriculture; mechanical engineering and machine construction; mechanics applied to agriculture (non-resident); analytical chemistry and mineralogy; German literature (non-resident); organic chemistry and chemistry applied to manufactures (non-resident); Latin language and literature; Greek language and literature; rhetoric and general literature; architecture; American history (non-resident); Anglo-Saxon and English literature; physics and experimental mechanics; military science and tactics; Spanish and Italian; mathematics; civil engineering; living Asiatic languages; agriculture; and Hebrew and oriental literature and history (non-resident). In 1875—6, there were 23 resident and 8 non-resident professors, 12 assistant professors, and 10 instructors. The following is a summary of the students for that year: In science 194, literature 45, philosophy 17, arts 43, agriculture 17, architecture 32, chemistry 16, engineering 82, mechanic arts 56, natural history 17, resident graduates 12. In the fourth year, or senior studies, there were 81, in junior studies 110, in sophomore studies 135, in freshman studies 154. Total, deducting repetitions, 531. At the commencement in 1874, 72 degrees were conferred, namely: B. A., 4; B. Lit., 4; B. Ph., 3; B. S., 30; B. Agr., 2; B. Arch., 6; B. C. E., 15; B. M. E., 1; M. S., 2; C. E., 4; Ph. D., 1; in 1875 the number of graduates was 52. The whole number of *alumni* at the latter date was 352. The university library contains 47,000 volumes. The museums comprise valuable collections in the departments of agriculture, architecture, botany, geology and mineralogy, military science, zoölogy and physiology, and in the fine arts. Male candidates for admission must be at least sixteen, females seventeen years of age, and must pass a thoroughly satisfactory examination in the following subjects: (1) geography, (2) English grammar, including orthography and syntax, (3) arithmetic, and (4) algebra through quadratic equations. This general examination will admit them to the university as optional students, or as students in the special courses of agriculture, chemistry, and physics. For other courses there are some additional requirements. Andrew D. White, LL.D., has been the president of the university since its opening.

CORPORAL PUNISHMENT, or the infliction of physical pain as a means of discipline in the education of children, has the sanction of high authority and time-honored example; but in recent times has fallen considerably into disrepute and disuse. Its necessity and propriety have been much discussed; and there are, probably, but few subjects in connection with practical education upon which more diverse opinions are entertained; some contending that a resort to corporal punishment, in families and schools, is legitimate and necessary, others, that it is a "relic of barbarism," and should never be employed, but that children can be, and always should be, governed by the use of "moral suasion,"—an appeal to their reason, their sensibilities, and their sense of right. Anciently, the propriety of this mode of educational coercion seems to have been scarcely questioned. Solomon is emphatic in his approval of it, in proof of which the following citations from the *Book of Proverbs* are often used:

"He that spareth his rod hateth his son; but he that loveth him, chasteneth him betimes."—XIII, 24.

"Foolishness is bound in the heart of a child; but the rod of correction shall drive it far from him."—XXII, 15.

"Withhold not correction from the child; for if thou beatest him with a rod, he shall not die. Thou shalt beat him with a rod, and shalt deliver his soul from hell."—XXIII, 13, 14.

"Correct thy son and he shall give thee rest, yea, he shall give delight unto thy soul."—XXIX, 17.

"Whom the Lord loveth he correcteth; even as a father the son in whom he delighteth."—III, 12.

"Chasten thy son while there is hope, and let not thy soul spare for his crying."—XIX, 18.

"The rod and reproof give wisdom; but a child left to himself bringeth his mother to shame."—XXIX, 15.

Whether the practice enjoined in these scriptural texts is to be considered as sanctioned thereby or not, its existence, if not its usefulness and necessity, has been recognized at all times and in all countries. Horace refers to it when he says, "*Memini* [carmina] *quæ plagosum mihi parvo Orbilium dictare*" (I remember the verses which Orbilius, my flogging (or feruling) schoolmaster, used to dictate to me, when a boy). Juvenal speaks of this school discipline as a matter of course: *Et nos ergo manum ferulæ subduximus;* or, as translated by Badham,

"And we ourselves once snatch'd the hand away
From prone descending rod, as well as they."

St. Paul speaks in a similar manner of the use of the rod as a means of family discipline: "Whom the Lord loveth he chasteneth, and scourgeth every son whom he receiveth;" and again, "God dealeth with you as with sons; for what son is he whom the father chasteneth not?" (*Hebrews*, XII, 6, 7.) St. Augustine says, in his *Confessions*, "Discipline is needful to overcome our puerile sloth, and this also is a part of thy government over thy creatures, O God, for the purpose of restraining our sinful impetuosity. From the ferules of masters to the trials of martyrs, thy wholesome severities may be traced." Melanchthon confessed that his teacher made him learn by using the rod. (*Nihil patiebatur me omittere; quoties errabam dabat plagas mihi.*) And he remarks, "Thus he made me a grammarian. He was the best of men; he loved me like a son, and I loved him like a father, and I hope we shall both meet in heaven." Dr. Johnson uniformly testified in favor of corporal punishment in schools. To Langton he said on one occasion, "My master whipped me very well; without that, sir, I should have done nothing." Goldsmith said, "It is very probable that parents are told of some masters who never use the rod, and are, consequently, thought the properest instructors for their children; but, though tenderness is a requisite quality in an instructor, yet there is often the truest tenderness in well-timed correction." Coleridge says, "I had *one* just flogging;" the cause being that he told his preceptor, that he "hated the thought of being a clergyman," because he was an infidel. "For this," says he, "Bowyer flogged me,—wisely, as I think,—soundly, as I know. Any whining and sermonizing would have gratified my vanity, and confirmed me in my absurdity." (See COLERIDGE'S *Table Talk*.) Locke, who was very much averse to the use of the rod, both in families and schools, says, "There is one, and but one, fault for which I think children should be beaten; and that is obstinacy or rebellion. And in this, too, I would have it ordered so, if it can be, that the shame of the whipping, and not the pain, should be the greatest part of the punishment."

Nothing, however, has been so grievously and shockingly abused by parents and teachers as corporal punishment, in all its various and loathsome forms,—flogging, flagellation, caning, whipping, scourging, beating with birch twigs, thongs, the ferule (a flat piece of wood, generally with a hole in the broad part), etc., etc. When the vile and unnecessary cruelties perpetrated upon children by these various instruments are considered, it is no wonder that corporal punishment appears to many persons altogether revolting,—a thing to be banished forever. Montaigne says, "Do but come in when the youths are about their lesson, and you shall hear nothing but the outcries of boys under execution, and the thundering of pedagogues drunk with fury;" and again, "How much more decent would it be to see their classes strewed with leaves and flowers, than with bloody stumps of birch!" It is a sad fact that, in whatever countries the rod has been used, it has degenerated into an instrument of cruelty and torture. Says Cooper, in *The History of the Rod*, "It is recorded of a Suabian school-master that, during his fifty-one years' superintendence of a large school, he had given

911,500 canings, 121,000 floggings, 209,000 custodes, 136,000 tips with the ruler, and 10,200 boxes on the ear. It was further calculated that he had made 700 boys stand barefooted on peas, 6,000 kneel on a sharp edge of wood, 5,000 wear the fool's-cap, and 1,700 hold the rod." Girls as well as boys, and even young women, in schools of high repute and attended by the children of people of rank and fashion, it was once the custom to subject to the most disgraceful and indecent flagellation. In a poem entitled *The Terrors of the Rod*, published in 1815, the whole scene is depicted.

> "The governess now takes her stand,
> The birchen scepter in her hand:
> With lofty air, inspiring awe,
> And upraised arm to inforce the law,
> She shakes the whistling twigs, and then,
> Whip—whip—whip—whip—inflicts the pain:
> Now pauses—while miss roars aloud
> Sad warnings to the little crowd—
> Crying, 'Oh! dear ma'am, pray give o'er,
> I never will do so no more.'"

On such occasions, it seems to have been insisted that the other children should be witnesses of the pain and disgrace of their fellow-pupil. Thus Shenstone in *The Schoolmistress*, describing such a scene, says,

> "—— Brandishing the rod, she doth begin
> To loose the brogues, the stripling's late delight!
> And down they drop, appears his dainty skin,
> Fair as the furry coat of whitest ermilin."

But the most touching incident of the affair is the presence of the offender's sister.

> "O ruthful scene! when from a nook obscure,
> His little sister doth his peril see."

And as the punishment proceeds, the sympathies of the little girl are painfully excited.

> "No longer can she now her shrieks command,
> And hardly she forbears, through awful fear,
> To rushen forth, and, with presumptuous hand,
> To stay harsh justice in its mid career."

The "horsing," as it was called, that is, the mounting of the boy to be punished on the back of another boy, was a practice that must have debased and hardened all concerned. In the *Spectator* (No. 168), the master of Eton School at that time is described as a brutal tyrant. "Many a white and tender hand," says the writer, "which the fond mother had passionately kissed a thousand and a thousand times, have I seen whipped until it was covered with blood; perhaps for smiling, or for going a yard and a half out of a gate, or for writing an *o* for an *a*, or an *a* for an *o*." Dr. Johnson, although an advocate of judicious corporal punishment, had been the victim of its abuse. "The master," he said, "was severe, and wrong-headedly severe. He used to beat us unmercifully; and he did not distinguish between ignorance and negligence; for he would beat a boy equally for not knowing a thing as for neglecting to learn it. For instance, he would call a boy up, and ask him the Latin for candlestick, which the boy could not expect to be asked. Now, sir, if a boy could answer every question, there would be no need of a master to teach him." So necessary was the rod deemed, that it was made an instrument of vicarious punishment in the case of princes; for whose offenses other lads, called *whipping-boys*, were made to suffer. Of this numerous instances are sometimes cited. Plutarch gives one in speaking of his tutor Ammonius. "Our master," says he, "having one day observed that we had indulged ourselves too luxuriously at dinner, at his afternoon lecture, ordered his freedman to give his own son the discipline of the whip in our presence; signifying, at the same time, that he suffered this punishment because he could not eat his victuals without sauce. The philosopher all the while had his eye upon us, and we knew well for whom this example of punishment was intended." Langhorne, in the *Life of Plutarch*, commenting upon this incident, remarks, "This mode of punishment in our public schools, is one of the worst remains of barbarism that prevails among us."

Dr. Cotton Mather, in his elegy on "Master Ezekiel Cheever" (see CHEEVER), refers thus to the severities of teachers in his time:

> "TUTORS. Be *strict*; But yet be *Gentle* too:
> Don't by fierce *Cruelties* fair *Hopes* undoe.
> Dream not, that they who are to Learning slow,
> Will mend by Arguments in *Ferio*.
> Who keeps the *Golden Fleece*. Oh, let him not
> A Dragon be, tho' he *three Tongues* have got.
> Why can you not to Learning find the way,
> But thro' the Province of *Severia?*
> 'Twas *Moderatus*, who taught *Origen*;
> A *Youth* which prov'd one of the best of men.
> The Lads with *Honour* first, and *Reason* Rule;
> Blowes are but for the *Refractory Fool*."

The abuses referred to, and especially the strong tendency to cruelty and excess in the infliction of corporal punishment, have led to the most earnest and emphatic denunciation of it in every form, and the advocacy of its total abolition. In some places, all resort to this kind of discipline is strictly prohibited, and expulsion substituted in its place. The opinions of educators in regard to the expediency of this measure are very diverse. Lyman Cobb, an extreme and enthusiastic advocate of exclusive moral suasion, expresses the sentiment of probably the entire class of thinkers to which he belonged. "I conscientiously believe that corporal punishment, as a means of moral discipline, is adverse to the proper, full, and happy development of the social, moral, religious, and intellectual character of those who are flogged; and because, also, I believe it has a degrading and hardening influence on those who receive it, and on those who inflict it." Here, it will be perceived, the argument is twofold, (1) Corporal punishment is hurtful and degrading to those who receive it; (2) It degrades and hardens the sensibilities of those who inflict it. The first proposition cannot be maintained as generally true; since there are innumerable examples to prove that those who have been habitually subjected to the severest discipline of this kind in their youth, have grown up to be men of the highest character for talent, benevolence, and worth. (See BUSBY.) The cases of Johnson, Coleridge, etc., already referred to, are instances of this. The second point of the argument would seem to be pretty well established by the "history of the rod;" since we see persons who have been accustomed to inflict pain upon others in this way become harsh, tyrannical, and unfeeling. At any rate, if this is not the invariable result, it appears to be quite generally the effect of an habitual administration of this kind of discipline. George B. Emerson says, "The great objection to corporal punishment is the fact that it excites angry passions, not only in the child, but in the master, and more in the latter than in the former. My own experience teaches me that the effect is almost necessarily bad on the individual who inflicts the pain. It excites a horrible feeling in him—a feeling which we might conceive to belong to evil spirits." It must be borne in mind, however, that school-masters, in the past, were entrusted with an almost unlimited authority and power over their pupils; and few persons are so constituted as to be able to excercise any such power for a long period, without greatly abusing it. At the present time, no such authority exists; and neither public opinion nor the law would permit teachers to commit with impunity the barbarities charged upon them in former times. Very many, perhaps nearly all, of the arguments against corporal punishment may be shown to be objections to its abuse rather than to its legitimate use. Thus, it is stated that the punishment is often inflicted in anger, that it is frequently excessive, sometimes administered without proper care and discrimination, or in an improper manner, or with unsuitable instruments. All this is true; and, perhaps, it may be truthfully alleged, that where corporal punishment is permitted at all, these abuses are, to some extent, unavoidable. The only questions, however, to be discussed are, Is corporal punishment ever necessary as a means of discipline; and, if necessary, in what cases, and under what restrictions, should it be permitted? The first question being decided in the negative, the second would, of course, be disposed of; since nothing but necessity can justify the infliction of physical pain upon others. Nor does the showing that corporal punishment is useful as a prompt and expeditious mode of punishing the offenses of children prove its necessity; all will admit that its concomitants and tendencies are, in many respects, so much to be avoided, that any other effectual mode of discipline is to be preferred. In judging of its necessity, we are to consider (1) the nature of the child to be governed, (2) the circumstances under which school or family discipline is to be carried on, and (3) the agents by whom the child is to be instructed and controlled. All sentimentalism is, of course, to be eliminated, and the facts of experience alone are to be appealed to. We must take human nature as it is, and not as we would wish it to be. We must consider the selfishness, willfulness, idleness, and spirit of mischief that must be controlled or exorcised before instruction can accomplish its purpose; and before concluding that corporal punishment is never necessary, we must be prepared to say, that, under all circumstances, and with all available instrumentalities, this control can be effected without any appeal to physical coercion. Are there not children so self-willed, so bent upon mischief, so determinedly wayward, and at the same time so devoid of sensibility or moral sense, that there is no way of controlling them except through the fear of bodily pain? Most educators say, from their own experience, that there are. The average nature of children is of this character, though varying in degree. They are ruled by their propensities, while the elements of moral restraint are undeveloped, and hence inoperative. Says Dr. Dwight, "The parents' will is the only law to the child; yet, being steadily regulated by parental affection, is probably more moderate, equitable, and pleasing to him, than any other human government, to any other subject. It resembles the divine government more than any other. Correction which is sometimes considered the whole of government, is usually the least part of it, a part indispensable indeed, and sometimes efficacious, when all others have failed." John Locke, an enemy to corporal punishment, admits that sometimes children are so obstinate, that they can be subdued by no other means. Mrs. Willard, for many years principal of the Troy Female Seminary, said in 1847, "I believe that corporal punishment should always be resorted to as soon as other modes of discipline fail, and I have known some young persons whose consciences were so weak, and who had so much of the animal in them, that the rod would be for them the most beneficial mode of punishment." D. P. Page, an educator of long experience, great moral force, and singular kindliness of nature, fully admitted the necessity of corporal punishment as a last resort. "I do not hesitate," he says, "to teach that corporal infliction is one of the justifiable means of establishing authority in the school-room. To this conclusion I have come after a careful consideration of the subject, modified by the varied experience of nearly twenty years, and by a somewhat attentive observation of the workings of all the plans which have been devised to avoid its use or to supply its place." Horace Mann, one of the most enthusiastic advocates of moral suasion, yet recognized the necessity of corporal punishment in some cases. "Punishment," he says, "should never be inflicted except in cases of the extremest necessity; while the experiment of sympathy, confidence, persuasion, encouragement, should be repeated forever and ever." An English teacher says, "It is necessary for a child to learn that the violation of law, whether of school, society, or God, brings inevitable suffering. The sense of right is so imperfectly developed in children, that one of the ways of impressing upon a child that right is right, and wrong is wrong, is by showing that suffering follows from one, enjoyment and a sense of satisfaction from the other." (*The Educational Reporter* (London, July 1., 1874.) Corporal punishment is sanctioned by Rosenkranz in *Pedagogics as a System*. "This kind of punishment," he says, "provided always that it is not too often administered, or with undue severity, is the proper way of dealing with willful defiance, with obstinate carelessness, or with a really perverted will, so long or so often as the higher perception is closed against appeal." Under peculiarly favorable circumstances,—a condition of things which may be considered ideal, that is, where the home training of the pupils of a school has been judicious and correct, where all have been taught, from their earliest years, to obey their elders and superiors; and this not by violence and severity, but with gentleness and firmness; and moreover, where the teacher or teachers of the school are gifted with the same talents for discipline,—under such circumstances, most educators would agree that a resort to corporal punishment would scarcely ever, if at all, be necessary. But such are not the circumstances under which children are instructed in school. This point is ably presented by Horace Mann. "The children who attend school," says he, "enter it from that vast variety of homes which exist in the state. From different households, where the widest diversity of parental and domestic influences prevails, the children enter the school room, where there must be comparative uniformity. At home some of these children have been indulged in every wish, flattered and smiled upon for the energies of their low propensities, and even their freaks and whims enacted into household laws. Some have been so rigorously debarred from every innocent amusement and indulgence, that they have opened for themselves a way to gratification, through artifice, and treachery, and falsehood. Others, from vicious parental example, and the corrupting influences of vile associates, have been trained to bad habits, and contaminated with vicious principles, ever since they were born;—some being taught that honor consists in whipping a boy larger than themselves; others, that the chief end of man is to own a box that cannot be opened, and to get money enough to fill it; and others, again, have been taught, upon their fathers' knees, to shape their young lips to the utterance of oaths and blasphemy. All these," as he says, "must be made to obey the same general regulations, to pursue the same studies, and to aim at the same results." Moreover, the teachers who are to control these diverse characters and dispositions, are persons of immature age and experience, with little, if any, special preparation, and often morally and temperamentally unfitted for the work; and, therefore, as he further says, "He who denies the necessity of resorting to punishment in our schools, virtually affirms two things: (1) That this great number of children, scraped up from all places, taken at all ages and in all conditions, can be deterred from the wrong and attracted to the right without punishment; and (2) That the teachers employed to keep their respective schools, are, in the present condition of things, able to accomplish so glorious a work. Neither of these propositions am I at present prepared to admit." He also prudently remarks, that "it is useless, or worse than useless, to say, that such or such a thing can be done, and done immediately, without pointing out the agents by whom it can be done."

These considerations assume, that every available agency has been employed before corporal punishment is resorted to; for all educators are agreed upon the point, that this kind of discipline is only, if ever, justifiable as a *dernier ressort;* that is, after every possible substitute for corporal punishment has been used. There is then one, and only one, alternative, as far as school discipline is concerned, and that is *expulsion.* To this it is objected that to expel a pupil, and particularly from a public school, is to acknowledge the inadequacy of the means to restrain him. "The vicious and ignorant scholar," says D. P. Page, "is the very one who most needs the reforming influence of a good education. Sent away from the fountains of knowledge and virtue at this, the very time of need! And what may we expect for him but utter ruin?" In the city of New York, corporal punishment has been prohibited in the public schools since 1870, expulsion being substituted for it. In the superintendent's report for 1873, the following statement is made: "There is a large class of boys whom our schools do not and cannot restrain, and whom, therefore, they cannot benefit, but must send adrift, to find their way inevitably to the reformatories and prisons, after having committed those injuries to the community which our school system was designed to prevent." It is further stated, "There are pupils, the sons of widowed mothers, who cannot be restrained at all at home; and when these are turned from the school they are lost indeed. To these children the city owes an education, and in order to be able to bestow it, it is bound by every obligation of right and duty to govern them; and if its chosen officers expel them, they evade a most solemn responsibility." On the other hand, in Chicago, in which corporal punishment, though not prohibited by positive law, has been abandoned for several years, the superintendent states (*Annual Report* for 1874—5), "Suspensions for misconduct, the great bugbear in the sight of apologists for the use of the rod, have been far less frequent than in the years when corporal punishment was in vogue. The most favorable year under the old regime gave us one suspension for each 22,000 pupils in daily attendance. The past year shows but one suspension for each 48,888 pupils in daily attendance." He also states that "a greater good has been secured at less cost than by the old methods. The chief element of cost has been time spent in discipline;" and added to this, is "loss of school time by enforced absence." The superintendent of St. Louis (*Annual Report* for 1869—70) says "Corporal punishment is still inflicted in the schools of our city, but I am glad to say in fewer cases every succeeding year. . . . Experienced teachers affirm that they think it impossible to do without it." The *Report* of the same superintendent for 1873—4 says, "We have had but very few cases of corporal punishment, when compared with former years, but still the number is quite large when brought together....Our general average is now about 1,000 cases per quarter for 25,000 pupils. Sixteen years ago, there was one hundred times this amount *pro rata*." The superintendent of Baltimore (*Annual Report* for 1875) says, "The rules of the Board allow the infliction of corporal punishment by the principals in cases of necessity; but, it must be said to their credit, that they have used the power but seldom....It is to be hoped that the day is not distant when corporal punishment will be with us a thing of the past."

This kind of punishment still survives in most American and English schools; but the frequency and severity with which it was formerly inflicted would not be tolerated at the present time. The opinions of practical teachers are generally in its favor; but the tendency of public opinion is towards its abolition, notwithstanding all that may be said in its support as being, under proper regulations, a wholesome and necessary means of discipline. In Germany, corporal punishment is permitted in the public schools, for certain offenses, as resistance to the teacher's authority, obscenity, irreverence, etc.; but its infliction is limited by strict regulations. In the school law of Prussia, adopted in 1845, it is provided that no punishment shall be administered exceeding "the bounds of moderate parental discipline," and that the teacher may be prosecuted for inflicting any excessive punishment. Another local ordinance provides that "corporal punishment may be inflicted, but only after the lessons are over, with parental moderation and a due regard to the physical condition of the child." Blows with the fist, or on the head, are strictly prohibited. Similar laws prevail in the cantons of Switzerland. In France, the law of 1850, which is still in force, prohibited all corporal punishment in the primary schools; and the substitutes for it are such punishments as *bad marks*, confinement, the imposition of tasks, placing the names of delinquents on a roll of dishonor, etc. In Russia, corporal punishment was prohibited in the primary schools at a very early date; but, in 1820, was restored under certain restrictions. In 1862, a statute was proposed for the government of the schools without corporal punishment; and this statute was submitted to German educators for their criticism and suggestions. Of the twenty-one who presented opinions, eleven opposed the abolition of corporal punishment, and two favored it, while eight expressed no opinion on that part of the statute. The statute was finally so modified as to leave the decision of the question to the local boards.

The school codes of the United States are generally silent in regard to the right of teachers to inflict corporal punishment; but there are numerous judicial decisions in favor of this right. By English and American law, a parent may correct his child in a reasonable manner, and the teacher is in *loco parentis* (see 2 Kent, 205; 1 Blackstone, 453; 9 Wendell's Reports, 355; 27 Maine, 280; 32 Vermont, 123; 2 Devereux and Battle, 365; 4 Gray, 37.) In the last decision mentioned, the Supreme Court of Massachusetts held that a *ferule* is a proper instrument of school punishment. There are numerous decisions which support this authority even while the pupils are going to or returning from school. In a case reported in 32 Vermont, 114, the judges of the Supreme Court unanimously held that "the supervision and control of the master over the scholar extends from the time he leaves home to go to school till he returns home from school." The decisions of many of the state superintendents have also sanctioned this doctrine. Pupils of all ages are equally amenable to such punishment. (See 27 Maine, 266.)

As to the offenses for which corporal punishment should be inflicted, and the proper mode of inflicting it, the following suggestions (of a practical teacher) would probably meet with universal approval from those who claim that this mode of discipline is, in certain cases, indispensable: (1) It should be reserved for the baser faults. A child should never be struck for inadvertencies, for faults of forgetfulness, for irritability and carelessness, or for petty irregularities. It is a coarse remedy, and should be employed upon the coarse sins of our animal nature. (2) When employed at all, it should be administered in strong doses. The whole system of slaps, pinches, snappings, and irritating blows, is to be condemned. These petty disciplines tend to stir up anger, and rather encourage evil in the child than subdue it. (3) In administering physical punishment to a child, the head should be left sacred from all violence. Pulling the hair or the ears, rapping the head with a thimble or with the knuckles, boxing the ears, slapping the cheeks or the mouth, are all brutal expedients. These irritating and annoying practices are far more likely to arouse malignant passions, than to alleviate them. (4) The temper with which you administer punishment will, generally, excite in the child a corresponding feeling. If you bring anger, anger will be excited; if you bring affection and sorrow, you will find the child responding in sorrowful feelings; if you bring moral feelings, the child's conscience will be excited. Anger and severity destroy all the benefit of punishment; love and firmness will, if anything can, work penitence and a change of conduct.— See H. Mann, *Lectures and Annual Reports on Education*, new edition (Boston, 1872); *Remarks on the Seventh Annual Report of the Hon. Horace Mann*, by the Association of Masters of the Boston Public schools (Boston, 1844); *Reply to the same*, by Horace Mann (Boston, 1844); *Penitential Tears* (Boston, 1845); Lyman Cobb, *The Evil Tendency of Corporal Punishment* (N. Y., 1847); Cooper, *A History of the Rod* (London); Karl Rosenkranz, *Pedagogics as a System*, trans. by Anna C. Brackett (St. Louis, 1872); Hecker, *Scientific Basis of Education* (N. Y., 1868); Currie, *Principles and Practice of Common-School Education* (Edinburgh); Pillans, *Rationale of Discipline* (Edinburgh, 1852). (See also Aphorisms, Educational; Authority; and Discipline.)

CORVALLIS COLLEGE (State Agricultural), at Corvallis, Benton county, Oregon, was founded by the Methodist Episcopal Church, in 1868, and is still under its control. The state agricultural college was made a department of it in 1872. The value of the college property is $10,000; the endowment consists of 90,000 acres of agricultural college land granted by Congress. The sum of $5,000 is annually received from the state. The institution embraces a primary department, a preparatory department, and a collegiate department. The last comprises the following schools: (1) School of Physics; (2) School of Mathematics; (3) School of Moral Science; (4) School of Language; (5) School of History and Literature; (6) School of Engineering; (7) Special studies of Agriculture. In chemistry and mathematics there are three classes (junior, intermediate, and senior), and in Greek and Latin two (junior and senior). There are four degrees conferred in this institution: (1) The degree of A. M., conferred on all who complete the course in the study of physics, mathematics, moral philosophy, history, and literature and language; (2) The degree of A. B., on such as complete the course in the schools of physics, moral philosophy, mathematics, and ancient languages; (3) The degree of B. S., on such as complete the course in the schools of physics, mathematics, moral philosophy, engineering, and the special department of agriculture; (4) The degree of Graduate of a School, on such as complete the course in any school. The title *Proficient* is granted to any candidate for degrees who passes two successful examinations, one of which must be final. Both sexes are entitled to the privileges of the college. The tuition varies from $6 to $15 (gold) per term, the college year being divided into three terms. An extra fee of $5 is charged for each modern language. The law provides for the free tuition of sixty young men, over sixteen years old, who are known as *state students*. In 1873—4, there were 6 instructors and 134 students, of whom 32 were in the agricultural department. The number graduating was 4 (B. S.); the whole number of *alumni*, 18. B. L. Arnold, A. M., is (1876) the president.

COURSE OF INSTRUCTION, or Course of Study, is a series of subjects of instruction or study, arranged in the order in which they should be pursued, and grouped or divided into grades, each to be completed in a certain time. Such an arrangement of studies is sometimes called a *graded course*, and, especially in superior instruction, a *curriculum*. When these various subjects are arranged in the form of a daily order of exercises, showing the time, or the number of lessons, to be given to each subject, it constitutes the school *programme*.

In order that the objects of intellectual education may be fully attained, it is of the greatest importance that the course of instruction should be judicious in respect to several points: (1) The selection of subjects; (2) Their order or arrangement; (3) The number prescribed for simultaneous study; (4) The division of the course into grades, with a definite time assigned for the completion of each. The first of these considerations is of paramount importance; since the subjects of study constitute not only the basis of intellectual culture, but the source of necessary information. Two points, consequently, are to be considered in this selection: (1) The value of the subjects as means of culture; (2) Their importance as sources of information. In the early stages of education, the first of these considerations should, without doubt, have the preference; but, as education advances, the second claims an increasing degree of attention, until, in the sphere of technical and professional education, it becomes almost the exclusive aim. We cannot, therefore, decide upon a course of instruction without considering the nature of the mind to be educated as well as the objects for which it is to be educated. In elementary or primary education, the necessary subjects of instruction may be grouped into the following: (1) *Language*, including reading and elocution, spelling, the analysis and definition of words, grammar, and composition; (2) *Rudimentary Mathematics*, including arithmetic, mental and written, algebra, and geometry; (3) *Elementary Science*, or a knowledge of *things*, graded from the simple perceptive facts of object instruction up to the rudiments of geography, natural history, physiology, physics, astronomy, etc.; (4) *History*; (5) *Graphics*,—writing, drawing, etc.; (6) *Athletics*,—gymnastics or calisthenics. To these may be added music, vocal or instrumental, which constitutes a part of *esthetics*. In addition to these branches of study, in some cases, the rudiments of a foreign language are also taught. The distinction between primary and secondary instruction not being definitely fixed as to subjects, some of those mentioned above may be deemed exclusively appropriate to the higher grade. For proper mental discipline, there must, however, be instruction in things as well as words,—the perceptive and conceptive faculties must be trained as well as the expressive faculties, so that the mind may be stored with ideas and their representatives in language. A proper discrimination between primary and secondary instruction depends upon (1) the kind of instruction, and (2) the subjects of instruction. Science taught in the high school is a very different thing from science in the primary school; in the one case we address to a much greater extent the higher faculties,—abstraction, generalization, reasoning, etc.; in the other, chiefly the perceptive and conceptive faculties. The subjects of elementary instruction have been classified by an eminent educator as follows: "(1) *Reading and Writing*—the mastery of letters; (2) *Arithmetic*—the mastery of numbers; (3) *Geography*—the mastery over place; (4) *Grammar*—the mastery over the word; (5) *History*—the mastery over time."

In schools of secondary instruction (high schools, academies, etc.), the course includes also language — the vernacular, and one or more modern languages, and also the rudiments of Latin and Greek, particularly in preparatory schools; mathematics, including algebra, geometry, trigonometry, mensuration, etc.; science (taught as such), including physics and chemistry, astronomy (descriptive, at least), physiology, etc.; to which are usually added English literature, rhetoric, the elements of mental and moral philosophy, etc. What properly belongs to a high school or academic course is, however, far from being settled; indeed, to fix the line of demarcation between primary and secondary instruction has scarcely been attempted; hence, what should constitute the course of study in schools of this grade is an open question, which is usually determined by the circumstances and special aim of the school. Thus, the course for a business college, for example, is very different from that of a collegiate or preparatory school. The theory of the common-school system in the United States requires that the pupil should enter the high school with a good knowledge of the studies already mentioned;—at least, reading, writing, arithmetic, geography, English grammar, and the history of the United States; but it is a great error to suppose that these subjects can be fully mastered by an immature mind. "Until all education," says a thoughtful teacher, "shall agree as to the precise culture power of each study, as well as to the exact value of its imparted information, and shall determine, to the satisfaction of all, what particular faculties each calls into activity, and just how the calling into action of these faculties educates a man, it will be impossible to establish a course of study which all shall acknowledge as absolutely the best."

In institutions for *superior instruction* (colleges and universities), the courses of study are also various, but they all include the departments of classics, mathematics, scientific studies, literature, philosophy, and modern languages. In the American colleges, elective courses have, within a few years, become quite general. (See BOSTON UNIVERSITY, and COLLEGES.) The courses of study prescribed in the different cities of the United States for the elementary public schools, differ considerably as to subjects, number of grades, and time assigned for the completion of the course. The states do not prescribe any uniform course; in regard to which fact Mr. Francis Adams, in *The Free School System of the United States* 1875), says, "It is worthy of remark that American educationists do not appear to recognize that the absence of uniformity in study and examination weakens their system. The nearest approach to a uniform course of study which has ever been attempted by any state, is to prescribe the text-books which shall be used, and when this has been done, it has been sometimes resented, and the cry of centralization has been raised. It is obvious that it would be a great advantage to statesmen and statisticians, and to the nation at large, if there were some test by which the progress of scholars in each state could be definitely ascertained." The diverse circumstances, however, of schools in the rural districts, of the larger "union schools," and of schools in cities, appear to preclude the possibility of a state course of instruction, except within certain limits. On the other hand, it may be said that the prescribing of a course of instruction—at least to the extent of defining the subjects to be taught, would go far towards settling the principles of common-school education, and preventing the abuses of which complaint is sometimes made. Thus, Deputy State Superintendent Danforth of New York, in addressing the State Teachers' Association, at the convention of August, 1873, said, "Our courses of study, in too many instances, indicate a disposition for the display of ostentatious learning rather than useful culture. The desire for showy acquirements, treating the mind as a receptacle for the storing of facts, irrespective of their use in giving mental nourishment and cultivating power, is a pernicious evil." The complaint that the courses of study prescribed for the common schools, particularly in many of the cities of the Northern States, are burdensome in their requirements, has frequently been made. In this connection, Mr. Francis Adams remarks, "Our [the English] elementary course is generally longer than the American; and yet ours is nothing like so ambitious a course. There is another difference between the two courses. In England, our attention is pretty much confined to the 'three R's; in America, what we call 'special subjects' are taught all along the line. A foreign language is often commenced in the lowest grade of the primary school." In prescribing a course of instruction for elementary schools, the special province of such schools should be kept steadily in view,—to give to their pupils the keys of knowledge, reading, writing, etc., and, at the same time, to discipline their minds so that they will be able to acquire and use knowledge in discharging the duties of their after lives.

The division of the Course of Instruction into grades is sometimes made by *topics*, and sometimes by *text-books;* and each method has its advocates. The former, it is claimed, gives more freedom to the teacher—more scope for the exercise of intelligent discrimination and original treatment; the instruction proceeds to a greater extent from the living teacher, since there is less inducement to confine it to a mere hearing of recitations. The subject is the paramount consideration; the text-book, secondary. The teacher, and the pupil also as far as possible, is required to consult various books, to compare their statements, to correct their errors; and thus, while perhaps a particular text-book is used as a basis for the instruction, a more general knowledge of the subject is imparted than is contained in any single work. Thus, if the study is the history of the United States, to one grade is assigned the *Colonial History;* to another, the period of the *Revolution* and the *Establishment of the Federal Government*, etc.; while, if the division were by book, it would be necessary that all the schools should use the same, and a certain number of pages would be assigned to each grade. For absolute uniformity, of course, the second plan is preferable; but some educators claim that uniformity may be carried too far, constituting a Procrustean standard, and tending to deprive the instruction of one of its most essential qualities,—its adaptability to different minds. Evidently the topical system makes more demands upon the teacher; and this, it is claimed, constitutes its great advantage, since it necessitates better information, higher culture, and more real teaching ability. What kind of development, it is asked, can result from the mere hearing of recitations? And what kind of influence can be exerted by a teacher that never goes beyond the narrow scope of the school text-book? Not that the legitimate use of text-books is to be discouraged, but only a servile dependence upon them; and it is claimed that the prescribing of topics rather than books, tends to prevent this. Says D. P. Page, in *Theory and Practice of Teaching*, "A teacher who is perfectly familiar with what is taught, has ten times the vivacity of one who is obliged to follow the very letter of the book." For the courses of instruction of common schools in the different cities, see the titles of the same; the courses in the higher institutions of learning are given each under its respective title. No attempt has been made here to show what in regard to moral and religious training properly belongs to a course of instruction for public or private schools. The various considerations appertaining to these topics will be found under the titles MORAL EDUCATION, and RELIGIOUS EDUCATION. — See *How to Teach* (N. Y., 1874); WELLS, *A Graded Course of Instruction for Public Schools* (N. Y., 1862); FRANCIS ADAMS, *The Free School System of the United States* (London, 1875); THOMAS HILL, *The True Order of Studies* (N. Y., 1876).

COUSIN, Victor, a French philosopher, and the founder of systematic eclecticism in philosophy, was born Nov. 28, 1792, and died Jan. 15, 1867. He distinguished himself as a student at the *Lycée Charlemagne*, and in 1812, was made assistant Greek professor at the *École Normale*. His early studies were rather in the direction of belles-lettres, but he soon turned his attention to philosophy. Roger Collard had already revolted against the sensationalism of Locke as depraved by Condillac, and had introduced the Scotch philosophy into France. For a while, Cousin was an ardent disciple of Reid; and, in 1815, he became an assistant professor of philosophy with Roger Collard, and lectured both at the *École Normale* and at the *Sorbonne*. In 1817, he visited Germany, and became acquainted with the Kantian philosophy, which had a great influence upon his later teachings. In 1821, his lectures were suspected of a bad political tendency, and were indefinitely suspended. In 1824, he went to Germany again, and was arrested in Dresden on the charge of belonging to the *Carbonari*, and sent to Berlin, where he was imprisoned for six months. During this stay in Germany, he became acquainted with Hegel, Schleiermacher, and Schelling. In 1826, he returned to Paris; and, in 1827, he was appointed professor of philosophy at the *Sorbonne*. During this period of enforced silence, he published an edition of Proclus and Descartes, and also part of a translation of Plato, which was completed in 1840. After the revolution of 1830, he became a member of the Council of Public Instruction, and later a director of the *École Normale*. In 1840, he became minister of public instruction, which position he held for only a few months, owing to the unsettled condition of politics. He was friendly to the revolution of 1848, but never had any political importance under the empire. His eclecticism was based on the doctrine that philosophy has always been either sensualism, idealism, scepticism, or mysticism. His constant oscillation of opinion is due to the fact that each of these systems has some truth in it; and the true philosophical method, doubtless, is to take from each of them the true, and reject the false. Without some standard of selection, the product must be a mere philosophical medley; and such was the result in this case. Still Cousin's eloquence and his exalted moral views combined to make his lectures very popular. The crowds at the *Sorbonne* recalled the days when William and Abélard had disputed there. He reorganized the system of primary instruction in France, and arranged the course of studies for the normal school. He also published several very full and valuable reports upon public instruction in Prussia and Holland. These have been translated into English. Cousin was an ardent believer in religious education. Purely secular instruction he thought more likely to do mischief than good. A complete edition of his works is published in French; and translations of his more important works have appeared in English.—See RIPLEY, *Philosophical Miscellanies* (Boston, 1838); O. W. WIGHT, Translation of Cousin's *Course of Modern Philosophy* (N. Y., 1855), and his *Lectures on the True, the Beautiful, and the Good* (N. Y., 1857); COUSIN'S *Report on the State of Education in Holland*, translated by Horner (London, 1838); and *Report on the State of Public Instruction in Prussia; with Plans of School-Houses*, translated by Austin (London, 1834).

CRAMMING, a term used in regard to education, to denote the fault of filling the mind with facts, without allowing it sufficient time to arrange and generalize them, to compare them with its previous acquisitions, or to determine their real significance, as related to general principles. It is thus a kind of mental stuffing, and, consequently, is opposed to the true object of education, which, as the word etymologically considered implies, is not to pour something into the mind, but to bring out, by appropriate exercise, its latent faculties. In college phrase, students are said to *cram* for an examination, when they make preparation with undue haste, impressing upon their memory, by repetition, a mass of things about which they expect to be questioned, but which, when the examination is over, they immediately forget. Such a process is exceedingly injurious to the mind, since it is a misdirection of its powers, wasting them at a time when they should be all steadily employed in the formation of those habits of acquisition and thought, which constitute the basis of a sound intellectual character.

In elementary education, cramming is, therefore, especially pernicious; and it is at this stage, that it is the most likely to occur. It may assume various forms, but chiefly the following: (1) Crowding the memory with verbal *formulæ*, —definitions, rules, statements of facts, names in geography, dates in history, etc.; (2) Overtasking the powers of the mind with a multiplicity of studies, or with such as are not adapted to its immature condition, and, therefore, cannot be comprehended; (3) Undue haste in instruction, so that the pupils are compelled to commit to memory what they have had no time properly to digest in their minds. Cramming may be the result either of the ignorance of the teacher, or of circumstances which compel him to violate the correct principles of education for some special end, as the preparation of pupils for a public exhibition in which they may make an imposing display of their superficial acquirements. (See EXHIBITION.) Such a sad perversion of the teacher's work as this implies is of too frequent occurrence; for parents and patrons are too fond of witnessing such displays, and there are teachers whose eagerness for praise or patronage is sufficient to overcome their sense of the true object of their vocation. They seem to work more for their own petty ambition or pecuniary gain than for the true welfare of their pupils. The evil of this is not alone with the pupil, but is shared by the teacher himself; for by merely cramming the minds which it is his duty to educate, he fails to realize in himself the best results of giving instruction; since, while "he may have the exquisite pleasure of seeing the growth of his pupils' minds, he may also have the higher satisfaction of feeling the growth of his own."—See BLACKIE, *On Self-Culture* (Edinburgh, 1875).

CRÈCHE, a French word signifying a *crib* or *manger*, but used in France, Belgium, and some other countries in Europe to designate a kind of infant asylum (in remembrance of the manger of Bethlehem). These institutions are supported and managed by either private persons or corporations. One of the most noted, and a model of its class, is the famous *Crèche Marie-Henriette*, at Antwerp, named after the queen of Belgium. This asylum originated in circumstances caused by the cholera, in 1866. The ravages of the epidemic were very great in Belgium, but especially in the city of Antwerp, causing extreme suffering and distress among the poorer classes of the population. Many children were deprived of one or both of their parents, and thus left helpless and destitute. Others suffered almost as much in consequence of the sudden destitution of their parents. In order to afford relief to these unfortunates, the *crèche* was opened in January, 1867, through the efforts of a number of philanthropic ladies and gentlemen; and since that time has continued to afford an asylum to hundreds of poor children, both boys and girls. When the parents are living, a small charge is made for the support of the child according to the amount of their earnings. The institution is not a hospital, sick and diseased children not being received. Every child aged 15 days, or at most 3 years, whose parents reside in the city, can be admitted to the *crèche*. The utmost care is taken of the inmates, both as to their nurture and discipline. No corporal punishment is permitted; and tender treatment is enforced by minute regulations, both sanitary and educational. Perhaps, the most important function of the *crèche* is the care taken of young children during the day, while their parent or parents are engaged in their work. Thus, mothers may leave their infants in the morning, and take them away in the evening, at a charge of 5 centimes (about 1 cent) per day, or 25 centimes per week in case of prepayment. This feature of the *crèche* distinguishes it particularly from other classes of infant and orphan asylums.

CRIME AND EDUCATION. The relation between crime and education has, of late, engaged the attention of philanthropists, educators, and statisticians. The progress of statistical research, in modern times, seems to have established the fact that there is a much larger percentage of illiterates among the criminal classes of society than in the total population of any country. Thus the criminal statistics of France, in 1870, showed that the educated criminals as compared with the entire educated population, were in the proportion of 1 to 9,291; while the illiterate criminals were as 1 to 41, compared with the whole number of illiterate persons; thus proving the proportion of criminals in the uneducated classes to be 226 times as great as that of the educated classes. The facts thus far published on this subject are, however, still very incomplete; but they invariably tend to prove that the uneducated constitute the class of society most prone to crime. It, therefore, follows, that every advance made toward the removal of illiteracy must have a tendency to reduce also the number of crimes. It is also evident that the more complete the statistical information which can be obtained of the criminal classes of all the countries of the world, the better will statesmen and educators be enabled to establish with certainty the true relation existing between crime and education. There are still, unfortunately, countries in which it is thought that the government has discharged its duty with regard to the criminal classes, when it has enacted criminal laws for the punishment of crime, and erected prisons and penitentiaries. The criminal is treated more as an offender against society who deserves to be punished and restrained from doing any more harm, than as an unfortunate member of society who should be reformed. Great progress, however, is of late noticeable in the legislation of almost every civilized country. The intellectual and moral condition of criminals is more thoroughly studied than before; the causes which lead to crimes are more earnestly investigated, and the agencies which are calculated to reform criminals are more eagerly employed. The improvement which has already been achieved is, to a great extent, due to the prison congresses held in the United States, as well as in Europe. The first congress of this kind was proposed by the inspector general of prisons in Belgium, Ducpétiaux, and was held in Frankfort on the Main, in 1845. The most important was the International Prison Congress, chiefly arranged by Dr. Wines of New York, and held in London, in 1872. A second international congress is to be held in Europe in 1877. A permanent commission for the promotion of penitentiary reform, organized by the congress of London, met in 1874, at Brussels, and in 1875, at Bruchsal, in the grand-duchy of Baden, Germany. In the United States, national prison congresses were held in 1870 at Cincinnati, in 1872 in Baltimore, and in 1874 in St. Louis. The labors of these congresses, while being chiefly devoted to the improvement of prisons and of prison life, have also shed a flood of light on the causes that produce crimes. Beltrani Scalia, one of the foremost prison-reformers of Italy of the present century, estimates the illiterates among the convicts of Belgium, Denmark, the Netherlands, Italy, Saxony, and Sweden at about one half of the entire prison population of those countries. Recent official returns show that the percentage of those who could not read on entering prison, was 56 in Austria, 49 in Belgium, 87 in France, 4 in Baden, 12 in Bavaria, 17 in Prussia, 60 to 92 in the different provinces of Italy, about 40 in the Netherlands, and 30 in Switzerland. In Ireland, 22 per cent of males, and 63 per cent of females were illiterate. In England, 34 per cent of the persons committed to county or borough prisons, were totally ignorant. In regard to the United States, Mr. J. B. Sanborne of Massachusetts, in a report prepared for the International Prison Congress of London, says that the general condition of American prisoners in point of education is low, yet they are not so extremely illiterate as criminals are in many countries, if we except the colored criminals of the South. In Massachusetts, for a period of eight years past, the statistics show very nearly one third of all prisoners to be wholly illiterate; yet, in the highest prison at Charlestown, the proportion of illiterate convicts, since the beginning of 1864, has been scarcely more than 1 in 10. Partial reports from seventeen states, including only three from the middle and western states, show that of an aggregate of 110,538 prisoners, 82,812 could read and write, 5,931 could read only, and 21,650 had no education. The totally ignorant were thus about 22 per cent of the criminal population; inclusive of those who could read only, they would amount to 25 per cent. A large number of those who could read and write, were also found to be very deficient, and the aggregate number of those "very deficient in education" was estimated at about 50 per cent of the criminal population. There was a great diversity in regard to illiteracy among criminals of different groups of states. In New York and Pennsylvania, the totally ignorant, or those unable to read and write, were 19 per cent; but those very deficient, at least 60 per cent. In five north-western states, the totally ignorant were 40 per cent, the very deficient, 75 per cent; in four states between the Mississippi and the Pacific, the totally ignorant were 21 per cent, the very deficient, 50 per cent; in five far southern states, the totally ignorant were 60 per cent, the very deficient, 85 per cent. According to the census of 1870, the number of illiterates above 10 years of age was, in New York and Pennsylvania, 4 per cent of the population; in the central states, 3½ per cent; in the western and Pacific states, 3 per cent; and in the South, 22 per cent. A comparison of these figures which give the total number of illiterates, with the number of illiterate criminals, shows that the illiterate classes of the population furnish a disproportionately large contingent to the number of criminals. The causes of this fact are plain. Ignorance unfits a man, to a considerable extent, for earning his daily bread, and, in most cases, dooms him to abject poverty; the want of intellectual culture is, moreover, generally coupled with a lack of the feeling of self-respect and moral responsibility, thus leaving the poor victim an easy prey to the many temptations which society offers. That education is a force restraining vice and crime, appears to be clearly established by two very important facts: (1) Wherever education is diffused among the people, the ratio of the number of criminals to the whole population diminishes; and (2) In all countries, the criminal class is mainly fed by the ignorant class. The conviction that the absence of education tends to increase crime, has induced educators and statesmen to strive to prevent this evil by the introduction of compulsory education laws. (See COMPULSORY EDUCATION.) The friends of this policy charge such states as fail to require that all children should be educated, with producing the very crime for which the criminal is punished. Opinions differ, however, as to the effect of compulsory education in diminishing crime, and as to the responsibility of the state government for uneducated criminals. Alison, in the *History of Europe*, boldly asserts the whole doctrine to be a fallacy, and presents statistics to prove that crimes are more numerous where education, that is, what is usually considered education, is diffused. "Experience," he says, "has now abundantly verified the melancholy truth, that intellectual cultivation has no effect in arresting the sources of evil in the human heart; that it alters the direction of crime, but does not alter its amount." Herbert Spencer asserts, in *Social Statics*, that "we have no evidence that education, as commonly understood, is a preventive of crime." Fletcher, in *Summary of the Moral Statistics of England and Wales*, says, that the comparison of the criminal and educational returns of England and other countries of Europe, "has afforded no sound statistical evidence in favor of, and as little against, the moral effects associated with instruction, as actually disseminated among the people." These are, undoubtedly, extreme views, and cannot be accepted in the light of more recent statistical information. They present, however, a strong argument in favor of improving the quality as well as the quantity of education diffused among the people, and especially of the importance of moral training as well as intellectual instruction. (See Moral Education, National Education, and Public Schools.)

While every one must hope that the steadily increasing diffusion of education will be found a powerful aid in reducing the number of crimes, all prison-reformers of the present day agree in expecting a reformatory influence upon convicted criminals through the means provided for their instruction. The provisions made in this respect in the United States are still inadequate; but great progress has been made of late years. Libraries are common, 33 prisons in 1873 reporting 50,663 volumes, being an average of 1,535 to each. In some prisons, the convicts have the benefit of schools, individual instruction in their cells, and lectures. Secular instruction is regularly afforded in the prisons of California, Illinois, Indiana, Kansas, Kentucky, Massachusetts, New York, New Hampshire, Oregon, Pennsylvania, Rhode Island, and Wisconsin. In some of these states, a school is held once a week; in others, two or five evenings a week. The prisons of most European countries are also generally provided with a school and a library. In the so-called houses of correction, which are intended for the treatment of those convicted of higher offenses, the educational element naturally occupies a more conspicuous place than in the state prisons. Still more is this the case in the institutions for the treatment of juvenile offenders. (See Reform Schools.)

An important discovery recently made by statistical science, has sometimes been quoted against those who hope that, as education increases, crime will decrease. It has been found that in the number of crimes committed in a country, the annual reports exhibit the same regularity, as in finances, commerce, and other departments of civilized life; and the inference has been drawn from this fact, that, however valuable education may be, no notable influence therefrom on the amount of crime need be expected; since that is unalterably fixed. This steadiness in the amount of crime was observed by Madame de Staël, and is made much of by Buckle, in his *History of Civilization*. Statistically it was proved by the great Belgian statistician Quetelet, who adduces an array of figures, which appear to render his position impregnable. Some have regarded this as a law of fatality: but Quetelet himself states, that this apparently invariable proportion depends upon the moral condition of society, and, that if this be changed, the apparently uniform proportion of crime will change in the same degree.—See *Annual Reports of the U. S. Commissioner of Education* for 1872, -3, -4; Alison, *History of Europe, from* 1815 *to* 1851, vol. I., and *Miscellaneous Essays*, s. v. *The Future;* Buckle, *History of Civilization in England* (London, 1857—61); Porter, *The Progress of the Nation* (Lond., 1836—43); Spencer, *Social Statics* (London, 1850); Quetelet, *La Statistique Morale*, in vol. XXI. of *Mém. de l'Acad. de Belgique* (Brussels, 1848).

CRUELTY (to Animals) is a prevailing trait in the characters of children who have not been specially trained to habits of kind, considerate, and humane feeling and conduct. The activity of a child's nature, its love of sport, and its undeveloped sympathies predispose it to acts of inconsiderate cruelty. Thus, Locke remarks, "Some children, when they have possession of any poor creature, are apt to use it ill; they often torment and treat very roughly, young birds, butterflies, and such other poor animals as fall into their hands, and that with a seeming kind of pleasure. This should be watched in them, and if they incline to any such cruelty, they should be taught the contrary usage, for the custom of tormenting and killing beasts will by degrees harden their minds even towards men; and they who delight in the suffering and destruction of inferior creatures, will not be apt to be very complacent or benign to those of their own kind." The necessity of cultivating in children the spirit of humanity, is inculcated by all who have written on the subject of moral training. Says one, "I am far from thinking that the early delight which children discover in tormenting flies, etc., is a mark of an innate cruelty of temper; because this turn may be accounted for upon other principles. But most certainly, by being unrestrained in sports of this kind, they may acquire by habit what they never would have learned by nature, and grow up in a confirmed inattention to every kind of suffering but their own. Accordingly, the supreme court of judicature at Athens thought an instance of this sort not below its cognizance, and punished a boy for putting out the eyes of a poor bird that had unhappily fallen into his hands." Hogarth, in the series of paintings entitled *The Progress of Cruelty*, illustrates this vice in its several stages of formation, the first picture showing children engaged in various barbarous diversions. The effect is heightened by the contrast of a youth who intercedes to prevent cruel outrage to a poor dog, offering a book to the inhuman young tyrant. To this picture the following lines are annexed:—

What various scenes of cruel sport
The infant race employ;
What future baseness, must import
The tyrant in the boy!

Behold a youth of gentler look;
To save the creature's pain,
"O take!" he cries, "here take my book;"
But tears and book are vain.

Learn from this fair example, you
Whom savage sports delight,
How cruelty disgusts the view,
While pity charms the sight.

All children are not equally addicted to such cruel sports; but perhaps, if we exclude certain extreme and abnormal cases, it may be said, that this inclination is found to exist in youths whose fearless courage, resolution, and activity, if properly trained, would make them exceedingly useful, if not illustrious, in after life. The germs of glory or of infamy exist in the mind of the young child; and, doubtless, in many cases, are precisely the same, expanding into one or the other according to the circumstances by which they are fostered. "It would be curious," says a celebrated writer, "to trace the human mind either to the perfection of greatness or to the completion of crime; to trace the hero from his play at *prisoner's base*, where he domineered over his schoolmates, to the battle by which he gains or loses an empire—the murderer from spinning a cock-chafer, or taking a bird's nest, to the moment when his hand is dyed in the blood of the heart he has stabbed, or the throat he has cut."

The need of specially educating the sympathetic affections in order to counteract this strong tendency in youthful minds, is thus clearly shown, and many methods of accomplishing this result are suggested by educators. Habitual training, not mere precepts, can alone effect this. Locke points out a number of ways of instilling such habits; such as accustoming children to be gentle and considerate to their pets, to be kind to each other, and to treat servants and dependents with civility and consideration. "Children," says he, "should be accustomed from their cradles to be tender to all sensible creatures, and to spoil and waste nothing." Especially should they be corrected in cruelly treating those animals whose external appearance is repugnant. "Children," says Maria Edgeworth, "should not be taught to confine their benevolence to those animals which are thought beautiful; the fear and disgust which we express at the sight of certain unfortunate animals, whom we are pleased to call ugly and shocking, are observed by children, and these associations lead to cruelty." Another writer, in this connection, remarks, "It might be of service in order to awaken, as early as possible, in children an extensive sense of humanity, to give them a view of several sorts of insects, as they may be magnified by the assistance of glasses, and to show them that the same evident marks of wisdom and goodness prevail in the formation of the minutest insect, as in that of the most enormous leviathan." In the same spirit are the strong lines of Cowper:—

> Ye, therefore, who love mercy, teach your sons
> To love it too. The spring-time of our years
> Is soon dishonored and defiled in most
> By budding ills, that ask a prudent hand
> To check them. But, alas! none sooner shoots,
> If unrestrained, into luxuriant growth,
> Than *Cruelty*, most dev'lish of them all.

(See Moral Education.)

CULTURE, a term used to denote the improvement of the human character by means of discipline, training, or self-exertion. It is used in both an active and a passive sense; in the former, implying the use of all necessary means and agencies to cultivate the human faculties, and in the latter, the result of their operation. Culture comprehends both development and refinement; that is, not simply bringing into active exercise the latent powers of the mind or body, but adding thereto a nice and careful discrimination as to their proper or improper exercise, with a due regard to the circumstances which require their employment. Thus a man of culture not only is able to express his thoughts in suitable and impressive language, but knows how to adapt his language to the persons, the place, and the occasions which call for this expression; nor does he give utterance to his thoughts except when it is proper to do so. Hence, culture, in its mature stage, not only implies power, but restraint, both belonging to the inner nature of the individual. There are as many kinds of culture as there are departments of human nature, or special faculties, to be cultivated and improved. Thus, culture may be physical, intellectual, moral, spiritual, and esthetic, according as its scope is the improvement of the powers and susceptibilities of the body, the intellect, the moral sentiments, the soul, or the taste. General culture implies that everything constituting the character of the individual has been brought to as high a degree of improvement as is possible. Special culture has reference to a particular department of human nature, or to the development of power in a certain direction. Thus, the culture of the poet, the painter, the orator, the teacher, the lawyer, or the clergyman is special, developing faculties needed in the particular vocation of each. Special culture, however, does not exclude general culture; for no man need be merely a practitioner, or worker in any narrow sphere of effort. The object of higher education is to give this general culture as a basis for that which is necessarily special, or technical.

The real instrumentality, in a certain sense the only one, by which culture can be effected, is self-exertion. None of the faculties, whether of the spirit, mind, or body, can be cultivated except by exercise. Thus a person can never learn to compose by studying grammar and rhetoric, nor to think and reason by committing to memory the rules of logic. If he would learn to write, or to think and reason, he must write and think and reason, on the same principle and in the same way as a person learns to swim, or a child to walk. This exercise is the individual's own work; but the exercise may be unsuitable and injurious, and, therefore, needs, at first, the careful guidance of experience. Hence, the need of an educator, until the individual has acquired sufficient knowledge and experience to direct the exercise himself. This shows the relation of education and culture, the one being the handmaid of the other. The instruments of culture vary with its special scope. For those of physical culture, we must learn what a knowledge of physiology and experience in gymnastics dictate; those of intellectual culture can be judiciously selected only by studying the laws which regulate the operations of the mind. But we are particularly to be on our guard in supposing that intellectual culture can spring from the mere study of other persons' ideas. True culture of this kind can alone come from (1) a patient, laborious, and diligent acquisition of ideas of our own, by observation and reflection; and (2) the study of the experience of other minds, and its verification, as far as possible, by that of our own. "The original and proper sources of knowledge," says Professor Blackie, "are not books, but life, experience, personal thinking, feeling, and acting." And again, "All knowledge which comes from books comes indirectly, by reflection, and by echo; true knowledge grows from a living root in the thinking soul; and whatever it may appropriate from without, it takes by living assimilation into a living organism, not by mere borrowing." (See *Self-Culture*, Edinburgh, 1875.) This is simply an emphatic and illustrative expansion of the general principle above stated; namely, that to cultivate our faculties, we must properly exercise them. No moral culture can be secured by the study of ethics; legitimate objects for the exercise of the moral feelings must be sought for and discovered; and, more especially, the will must be trained so that it will obey the voice of reason and conscience, even amid the mightiest tempest of passion and desire. Related to this, is the culture of the soul—a culture which is paramount to all, and to which every other species of culture is subservient; and just as one can learn to walk only by walking, to think only by thinking, and to live nobly only by acting nobly on every occasion, so one can only advance in spiritual culture by communing, by prayer and contemplation, with the Great Spirit, the Father of mankind, and the Creator of the universe. True Christian culture comprehends the development of a capacity to do right, and to be right, in every relation which we bear to each other, and to our Maker, simply by applying the general principle herein enunciated, of active beneficence, based upon the simplest principles of moral and religious truth. (See EDUCATION.)

CUMBERLAND UNIVERSITY, at Lebanon, Tenn., was founded by the Cumberland Presbyterian Church in 1842. The value of its buildings and grounds is $20,000. The institution comprises a business college and telegraph institute (at Nashville); a preparatory school; a collegiate department, with a classical course of four years, leading to the degree of Bachelor of Arts, and a scientific course of three years, leading to the degree of Bachelor of Science; a school of civil engineering with a two years' course, leading to the degree of Civil Engineer; a law school; and a theological school. The degrees of Master of Arts and Doctor of Philosophy are conferred upon graduates who pursue prescribed post-graduate courses of study. A plan has been adopted, by which non-resident students, through a system of correspondence and examinations, may receive the benefits of the college courses. In 1874—5, there were 13 instructors and 391 students (deducting repetitions); namely, commercial, 127; telegraphic, 38; preparatory, 66; collegiate, 85; law, 70; theological, 28. The university library contains about 7,000 volumes. The presidents have been as follows: F. R. Cossitt, D. D., 1842—4; J. C. Anderson, D. D., 1844—1866; B. W. McDonald, D. D., LL. D., 1867—1872; Nathan Green, A. M., L. B. (chancellor), the present incumbent, appointed in 1872.

CURIOSITY, or the desire *to know*, is a very important element of the mind, in its relation to education. The basis of the success of the teacher is the attention of the pupil; and while many instructors may appeal to the sense of fear to compel attention, he only can make a beneficial and lasting impression upon the learner's mind, who arouses his attention by awakening a genuine interest in the thing to be learned; that is, by stimulating his *curiosity* to know that of which he has become sensible that he is ignorant. This feeling is natural to children, as being the active principle of their minds. Nature has implanted it for many and wise reasons; and, therefore, it should not be repressed, but, on the contrary, should be stimulated and encouraged. This is strongly enjoined by Locke, in *Thoughts on Education*. "As children," he says, "should never be heard when they speak for any particular thing they would *have*, unless it first be proposed to them, so they should always be heard, and fairly and kindly answered, when they ask about anything they would *know* and desire to be informed about. Curiosity should be as carefully cherished in children, as other appetites suppressed." Many educators, both parents and teachers, often err in frowning upon children for asking questions, and thus, especially in the case of those who are timid and diffident, seriously impair a mental activity which could have been made an important means of education. Of course, curiosity should not be allowed to degenerate into inquisitiveness or forwardness; but should be kept within its natural and proper limits; that is, as Locke says, "whenever reason would speak, it should be hearkened to."

CURRICULUM. See COURSE OF INSTRUCTION.

CURTIS, Joseph, a distinguished friend of education in the city of New York, was born in Newtown, Ct., in 1782, and died in New York, April 12., 1856. He became a resident of that city at the age of 16, and early manifested a disposition for active beneficence. He served for several years as the secretary of the Society for the Prevention of Pauperism, and was active in all the public charities of the day. As a member of the Manumission Society, he ardently cooperated with Peter A. Jay, Cadwallader Colden, Isaac M. Ely, and others in securing the state act of manumission, which was passed in 1817; and he was afterward one of the leading spirits in establishing the New York House of Refuge, of which he took charge for about a year, thus initiating the then novel enterprise of attempting to reform juvenile delinquents (1825). Previous to this, in 1820, he was instrumental in opening, at Flatbush, L. I., the first Sunday-school for free blacks. Mr. Curtis was also one of the founders of the Public School Society of the city of New York, of which he continued to be an active and devoted member until its dissolution in 1853, when he was chosen one of the fifteen members of that society who, for a time, were to represent it in the Board of Education. He had been a diligent and sagacious business man, and always eminently practical; but he suffered great losses through the effects of the war of 1812—15. Few lives have been marked so deeply and constantly with deeds of genuine philanthropy and self-sacrificing benevolence, as was that of Joseph Curtis, not only in his public life, but in the inner circle of domestic privacy. — See W. O. Bourne, *History of the Public School Society* (N. Y., 1870); B. K. Peirce, *A Half Century with Juvenile Delinquents* (N. Y., 1869); Barnard's *Journal of Education*, vol. i.; C. M. Sedgwick, *Memoir of Joseph Curtis, a Model Man* (N. Y., 1858).

CURTIUS, George, a German philologist and author of school books, was born at Lübeck, in 1820, and studied philology at the universities of Berlin and Bonn. In 1842, he was appointed teacher at *Blochmann's Institute* (see Blochmann) at Dresden; in 1845, he became lecturer at the university of Berlin; in 1849, extraordinary, and in 1851, ordinary professor at the university of Prague; in 1854, professor in Kiel; and in 1862, professor in Leipsic, where he also became one of the directors of the philological seminary. Curtius endeavored to use the results of comparative linguistics to a larger extent than had previously been done in the study of Latin and Greek, and was the first who wrote a grammar of the Greek language for schools from this stand-point. This work (*Griechische Schulgrammatik*, Prague, 1852; 11th edit., 1875), is regarded as one of the best text-books in the province of the classical languages, and has not only been extensively introduced into the German gymnasiums, but has been translated into many foreign languages. The principles which are carried out in this book, are elucidated in a special work, called *Erläuterungen zu meiner griechischen Schulgrammatik* (2d ed., Prague, 1870), and in many essays of his *Studien zur lateinischen und griechischen Grammatik* (8 vols., Leips., 1868—75). In another work, *Grundzüge der griechischen Etymologie* (2 vols., 4th ed., Leips., 1873), he undertook to find a strictly scientific basis for Greek lexicography. He also wrote *Zur Chronologie der indogermanischen Sprachforschung* (2d ed., Leips., 1873), and *Das Verbum der griechischen Sprache* (1st vol., Leips., 1873).

DACIER, André, a noted French scholar, born at Castres in 1651, died in Paris, in 1722. He published translations of several classic authors, among them, Plutarch's *Lives*, Aristotle's *Poetics*, the *Œdipus* and *Electra* of Sophocles, the works of Horace, and some of Plato's dialogues. He was one of the 39 scholars selected to edit the celebrated series of the classics *in usum delphini*, prepared by order of Louis XIV., for the instruction of the dauphin. To this series he contributed an edition of Pomponius Festus and of Valerius Flaccus. He was appointed keeper of the library of the Louvre; and, in 1713, became perpetual secretary of the French Academy.

DACIER, Anne, wife of André Dacier, and illustrious for her extraordinary attainments in classical (especially Greek) scholarship, was born in 1654, and died in 1720. Her father was the eminent scholar Tanneguy-Lefèvre, by whom she was educated. Her marriage, in 1683, to André Dacier, who had been her fellow-pupil under her father's instruction, was humorously styled the "marriage of Greek and Latin." She, with her husband, assisted in preparing classics for the use of the dauphin, contributing editions of Florus, Eutropius, Aurelius Victor, and some others. She published also translations of some of the plays of Plautus and Terence, Homer, Aristophanes, etc. In profound and accurate scholarship, and acuteness of mind, she is generally thought to have excelled her learned husband.

DACTYLOLOGY (Gr. δάκτυλος, a finger), a method of communicating ideas by means of signs made with the fingers, composing what is called the manual or finger alphabet, and employed by the deaf and dumb. There are two alphabets of this kind: (1) the single-hand alphabet, the origin of which dates back to Bonet (q. v.), and which is used every-where except in Great Britain, and is gaining ground there; and (2) the two-hand alphabet, which was originally invented by Dalgarno (q. v.). The former of these alphabets was brought to a high degree of perfection by the abbé de l'Épée and the abbé Sicard (q. v.). (See Deaf-Mutes, and Peet, Harvey P.)

DAKOTA was organized as a territory March 2., 1861, being formed from the territories of Minnesota and Nebraska. In 1868, a portion of the extensive territory of Dakota was taken to form the territory of Wyoming. All this region originally formed a part of Louisiana, purchased from France in 1803. According to the census of 1870, the area of Dakota comprises 150,932 square miles: and its population, at that time, was 14,181. The first permanent white settlements were made in 1859, in what are now the counties of Yankton, Clay, and Union; but there was but little immigration into the territory until 1866.

Educational History.— The first legislature met in March, 1862; but no school law was enacted until 1867, when an act was passed by the territorial assembly, providing for the appointment of a superintendent of public instruction, county superintendents, district directors, and boards of school trustees. This law was approved Jan. 3., 1868. In 1869, another law was passed, which directed the election of a territorial superintendent, who should report annually to the legislature, and county superintendents, who were to report annually by the 10th of November. The immediate government of the school-district was intrusted to a district board, composed of a director, a clerk, and a treasurer. Annual school meetings were to be held in each district on the last Saturday in March. The district clerk made the annual enumeration of children; and no district that had not maintained a school three months during the year, was entitled to any portion of the school fund. Politics and sectarianism were excluded from the schools. In 1870, a general improvement in the schools, and an increase in attendance, were remarked; the number of children receiving instruction being 1,144, out of a population of 14,181, and the salaries of teachers ranging from $25 to $100 per month. Much trouble, however, was caused by the want of uniformity in text-books. In 1871, the school law was repealed, and a new one enacted. In 1873, this was amended, the number of schools in the territory at that time being, by an approximate estimate, 100, and the number of children of school age being 5,312, of whom 2,006 were reported as enrolled in the schools. About $22,000 were raised that year for school purposes. The territorial superintendents have been, James S. Foster, 1869—71; J. M. Turner, 1871—3; E. W. Miller, 1873—5; and J. J. McIntyre, elected in 1875, and still in office (1876).

School System.—The principal school officer under the present law is the *superintendent of public instruction*, who is elected biennially. He is permitted to choose a deputy who must reside in that portion of the territory north of the 46th parallel of latitude. His duties are to exercise a general supervision over the schools, and to hold, in connection with the county superintendents, annual teachers' institutes, attendance upon which is expected from all teachers applying for certificates. To defray partially the expenses of these institutes, the sum of $100 is appropriated from the treasury. The territorial superintendent, also, grants teachers' certificates, fixes the grades of county certificates, prescribes the text-books to be used in the schools, and makes an annual report to the governor. *County superintendents* are elected by the people biennially. They divide their counties into school-districts, examine teachers, grant certificates valid for 3 months or a year, apportion the school moneys, and report annually to the territorial superintendent. *District-school boards*, composed of three officers, a director, a clerk, and a treasurer, are elected annually. Deriving their authority directly from the people of the district by vote at the annual meetings, their power, within the law, is supreme in every thing that relates to the building, purchasing, or renting of school-houses, the supply of furniture or apparatus, the employment of teachers, or the direct government of the schools of their districts. They are authorized to send scholars from their own districts to the graded or high schools of other districts within a reasonable distance, the tuition fee for which may be paid from the teachers' fund. The voters at the annual meeting, or at a special meeting called for the purpose, prescribe the length of time the schools shall be kept open each year, and specify whether their portion of the school fund shall be applied to the support of summer or winter schools. No district is entitled to any portion of the public fund unless it shall have forwarded to the county superintendent its annual report, within 40 days of the time specified for holding the annual meeting, nor unless it shall have kept open a school for 3 months during the previous year. Each district may raise annually by tax on taxable property a sum for school purposes, not to exceed one per cent of the valuation. County or town assessors are directed to tax every voter $1 annually for the support of the schools, to which is added an additional tax of 2 mills on the dollar. The schools are free to all children between the ages of 5 and 21 years, and the number of such children in each district is made the basis for the apportionment of the school fund.

Educational Condition.—The number of organized school districts, in 1875, was 296; the number of schools, 172. The school revenue was as follows:

From county tax	$13,138.41	
" district tax	15,512.49	
" other sources	3,952.23	
Total		$32,603.13

The expenditures were as follows:

For teachers' wages	$18,045.86	
" buildings, repairs, rent, etc.	9,985.01	
" incidentals and furniture	4,572.26	
Total		$32,603.13

The following are the principal items of *school statistics* for 1875:

Number of children of school age (5 to 21 years)	8,343
" " " enrolled in the schools	4,428
Number of teachers, both sexes	208

Normal Instruction.—No school has yet been established for the training of teachers, the sparseness of the population not permitting it. An annual teachers' institute, however, is held, the legal session of which is 10 days. Four such institutes have, thus far, been convened, with a general attendance, on the part of the teachers of the territory.

The provisions made in Dakota for any thing further than elementary instruction are, of course, very limited, the smallness of the population rendering all attempts in this direction, up to the present time, premature. Writing in 1876, the territorial superintendent says: "We have no regularly formed school associations, except in some of the older counties, which are beginning to organize county teachers' associations." The only school of a higher grade than elementary, is an academy at Yankton.

DALGARNO, George, an ingenious British scholar, teacher, and writer, chiefly noted for his publications on the art of teaching deaf-mutes. He was born at Aberdeen about 1627, and died at Oxford in 1687. He was educated at the university of Aberdeen, and subsequently taught a school at Oxford for about 30 years. His two celebrated publications are *Ars Signorum, vulgo Character Universalis et Lingua Philosophica* (London, 1661), and *Didascalocophus*, or *The Deaf-Mute's Tutor* (Oxford, 1681). The former of these was an ingenious attempt to construct a system for representing ideas by arbitrary signs, and presents a very full and quite accurate exposition of the principles of deaf-mute instruction; the latter work was designed "to bring the way of teaching a deaf man to read and write, as near as possible to that of teaching young ones to speak and understand their mother-tongue." Dalgarno also invented a two-hand alphabet, from which the one subsequently adopted in England appears to have been derived. His collected works were reprinted in 1 vol. 4to, in Edinburgh (1834).—See CHAMBERS, *Biographical Dictionary of Eminent Scotsmen; Edinburgh Review* (July, 1835); *Annals of the Deaf and Dumb*, vol. ix., in which *Didascalocophus* is reprinted.

DAME SCHOOLS, the name given in England to small elementary private schools kept by women, and attended by young children, both boys and girls. Schools of this kind formerly abounded, every village and hamlet having its dame school. Shenstone in the *School-mistress* gives a probably correct, although satirical description of such a school and of the dame that presided over it.

"In every village marked with little spire,
Embowered in trees, and hardly known to fame,
There dwells, in lowly shed, and mean attire,
A matron old, whom we school-mistress name;
Who boasts unruly brats with birch to tame:
They grieven sore, in piteous durance pent,
Awed by the power of this relentless dame;
And oftentimes, on vagaries idly bent,
For unkempt hair, or task unconned, are sorely shent."

Although, owing to the present ample provision, in England, for better instruction through the national schools, the need of dame schools no longer exists, yet they still linger in large numbers, and obstruct the proper working of the *Education Act*. In the *School Board Chronicle* of Feb. 6., 1875, there is the following suggestive complaint: "It is within the power of a few illiterate old people to set the elementary education act at nought, by giving the name of *schools* to the miserable places in which it is their misfortune to dwell, and professing to impart instruction to children whose parents are desirous of evading the school board's by-laws." This would seem to confirm the descriptions of these schools given by Dickens in some of his novels, of which the following is a specimen: "The pupils ate apples, and put straws down one another's backs, until Mr. Wopsle's great-aunt [the school-mistress, or dame] collected her energies, and made an indiscriminate totter at them with a birch rod. After receiving the charge with every form of derision, the pupils formed in line, and buzzingly passed a ragged book from hand to hand. The book had an alphabet in it, some figures and tables, and a little spelling; that is to say—it had once." This description gives an idea of the interior of one of these schools, and the following, from *Good Words*, is intended to represent the exterior:

"The less pretentious kind of Dame's School chiefly differs from the brass-plate kind in that it is less pretentious, otherwise they are pretty equal in their inefficiency. The mistress of the humbler school is not called a governess, but "the missis," or "the old lady." The missis not unfrequently keeps a shop as well as a school; the scrawl announcing that a school is "kept here," appearing in the window in conjunction with a pair of crossed "church-warden pipes," a couple of bottles of sweets, half a dozen high-dried herrings, and a box of such sundries as thread, tape, and stay-laces, and her school is supported on the same ground as her shop—because it is "close handy." Their "handiness" is the strong point of these schools; if they ceased to be handy they might as well take down their banner, and close their doors. Hence it comes that one or more of them is to be found in almost every street, of quarters inhabited by the industrious poor. The mothers in such quarters will tell you that they are glad to be rid of their children for a few hours in the day, and thankful to have a place to send them to, where they will be out of danger and out of mischief. So they "pack them off" to the old lady's."

The existence of dame schools in England has recently been much complained of, inasmuch as parents can comply with the compulsory attendance law, or evade its penalties, by sending their children irregularly to these schools; and large numbers of them (sometimes called *private adventure schools*) have sprung up, within the last two or three years, for that express purpose. The evil is difficult to control without more stringent penal legislation than public opinion in England is, as yet, fully prepared for.

In the United States, the country district schools are generally taught by young women; but the law requires that they should be regularly certificated teachers. To one such the beautiful lines of Longfellow probably refer, which may, with interest, be contrasted with Shenstone's quaint description of the school dame of his time.

"She dwells by great Kanhawa's side,
In valleys green and cool,
And all her hope and all her pride
Are in her village school.

Her soul, like the transparent air
That robes the hills above,
Though not of earth, encircles there
All things with arms of love.

And thus she walks amid her girls,
With praise and mild rebukes;
Subduing e'en rude village churls,
By her angelic looks."

Some of the private or "select" schools of the cities answer, to a certain extent, to the English dame schools, but are of much higher grade of efficiency. There is no doubt that, as education becomes more diffused among all classes of society in England, the possibility of "illiterate old people" keeping a school with the chance of obtaining any patronage whatever, will become entirely a thing of the past.

DANA, James Dwight, an eminent American scientist, teacher, and author, born at Utica, N. Y., in 1813. He was educated at Yale College, where he afterward served as an assistant to Professor Silliman, and subsequently (1855) succeeded him as professor of chemistry. He published several works of importance in the departments of natural history, geology, and mineralogy. His school text-books have been extensively used; among which may be particularly mentioned his *System of Mineralogy*, 5th ed. (1858), and *Manual of Geology* (1863). Since 1846, he has been one of the editors of the *American Journal of Science and Arts*, founded in 1819, by the elder Silliman.

DANCING, and Dancing Schools. Dancing, as a means of expressing by movements and gestures of the body the emotions of the mind, is found among all the nations of the earth. In the Old Testament, the dance is spoken of universally as symbolical of rejoicing, and is often coupled, for the sake of contrast, with mourning. Sacred dances were performed on the solemn anniversaries of the Jews, the performers usually being a band of females who volunteered their services, although there are not wanting instances also of men's joining in the dance on these seasons of religious festivity. King David danced on the auspicious occasion of the ark's being brought up to Jerusalem; and his example was imitated by the later Jews, who incorporated the dance with their favorite usages, as an appropriate close of the joyous occasion of the feast of the Tabernacles. The members of the *Sanhedrim*, the rulers of the synagogues, doctors of schools, and all who were eminent for rank or piety, accompanied the sacred music with their voices, and leaped and danced with torches in their hands for a great part of the night, while the women and common people looked on. The Jewish dance was performed by the sexes separately. There is no evidence that the diversion was promiscuously enjoyed, except perhaps at the erection of a deified calf, when, in imitation of the Egyptian festival of Apis, all classes of the Hebrews intermingled in the frantic revelry. Among the Egyptians, dancing formed a part of the religious ceremonies, and was also common in private entertainments. In Greece, the gods themselves were represented as passionately fond of the diversion; and in the Roman empire, it was a favorite pastime, resorted to not only to enliven feasts but in the celebration of domestic joy. It was, however, considered beneath the dignity of persons of rank and character to practice it. Under the patronage of the Roman emperors, the art was carried to the utmost perfection; the favorite mode being that of pantomime, which, like that of the modern *almehs*, or Arab dancing women, was often of the most licentious description. In the early Christian church, the dance was introduced on the festival days of martyrs and other saints, as well as on occasions of great ecclesiastical solemnities. Subsequently, dances connected with masquerades became a universal habit in the Roman Catholic world at Shrove-tide, on the day of St. Vitus (hence the name of St. Vitus's dance), and on that of *Corpus Christi;* and the "Jumping Procession" at Echternach, in the grand-duchy of Luxemburg, which was instituted in honor of the cessation of the St. Vitus's dance, and which consists in all the participants' jumping two steps forward and one step backward, is still celebrated with great solemnities, and attended by large crowds of devout people. In all the Christian churches of Germany, there was, in early times, an elevated portion, which was separated from the other parts of the churches and called *chor* (from the Greek χορός, dance or dancing place, English, *choir*). Upon this the priests danced every Sunday and festive day. Every church festival had its own peculiar dances; and, on the vigils, the most zealous and virtuous Christians assembled, during the night, before the doors of the churches, for singing and dancing. Thus, like other arts, dancing was long an art chiefly in the service of religion. This character it has now lost almost entirely; but a few small sects in the United States, like the Shakers and Rappites, still observe it as part of their religious worship.

In proportion as dancing became disconnected from the church and religion, it assumed greater prominence as a social enjoyment, both in the family life and at great popular festivals. At court celebrations, spring and fall festivals, harvest homes, and especially wedding-feasts, dancing came to be looked upon as an indispensable part of social enjoyment; and peculiar kinds of dances, as the ballet, were introduced into the theaters. Every country, and almost every province, produced its own national dance, reflecting and representing the character of the people. In all these dances, two elements may be observed, the social and the artistic. The latter has attracted the interest of many educational writers who have viewed dancing as a gymnastic exercise especially suited for promoting graceful manners and developing the sense of the beautiful. (See CALISTHENICS.) It is, however, chiefly the element of sensuous enjoyment which has given to dancing the prominent position which it holds at present among popular amusements. The characteristic feature to which it owes this prominence, and which, more than any thing else, distinguishes it from the dancing of the ancient world, is the participation in its performance of persons of both sexes. Among all classes of society, the dance has thus become the means of affording an occasion to the sexes of forming an acquaintance with each other; and, hence, except when properly restricted, has been viewed as a prolific source of moral danger and excess. Religious writers of all denominations have accordingly vied with each other in warning young persons against the dangers of the ball; still there has been considerable difference in the position taken by different churches in regard to dancing in general. Many of the Protestant churches absolutely prohibit their members from dancing; while the Roman Catholic Church has been less strict in its denunciations, raising its warning voice more against the abuses than against the practice itself.

The prevalence of dancing as a social amusement and the esteem in which it is held as a part of the necessary preparation for polite society, naturally prompt all parents who have no religious or moral objection to the practice to have their children, especially their daughters, instructed in dancing. No provision has anywhere been made for it in any public-school system; but, in private schools and boarding-schools, it is quite common to find that the prospectus includes dancing among the *extras* in which instruction may be received. This is less frequently the case in Protestant than in Catholic seminaries, and in American than in European schools. The large majority of pupils, however, who are instructed in dancing, receive their instruction in special dancing schools or academies, the number of which is immense. It is a matter of course that, as a general rule, this latter class of schools cannot offer so good a supervision of its pupils as the former. See CZERWINSKI, *Geschichte der Tanzkunst* (Leipsic, 1862).

DARTMOUTH COLLEGE, at Hanover, New Hampshire, was chartered in 1769. The first class graduated in 1771. It originated in a school for Indian youth established at Lebanon, Connecticut, by the Rev. Dr. Wheelock, the first president, and was named after Lord Dartmouth, who subscribed to a fund for the school. The college is not by its charter under the control of any religious denomination, but a large majority of the trustees have usually been Orthodox Congregationalists. The buildings front on a fine campus on an upland plain near the Connecticut river. The institution has extensive philosophical apparatus; and an astronomical and meteorological observatory, with a telescope, made by Clark, of 9.4 inches aperture and 12 feet focal length; a museum of geology and natural history; a chemical laboratory; and a gymnasium. The libraries contain 53,900 volumes. It is supported by tuition fees and the income of its endowments, which, in all the departments, amount to about $525,000. The college comprises an academic department, the Chandler scientific department, the New Hampshire college of Agriculture and the Mechanic Arts, the Thayer school of Civil Engineering, and a medical department. Funds have recently been given to establish a law department. While the college adheres, in general, to the idea of a settled and well-balanced curriculum, it admits, to a certain extent, the elective principle. (1) There is a choice, as students enter, between the three under-graduate departments, — academic, scientific, and agricultural. (2) In each of these departments, a partial course may be taken, embracing two, at least, of the prescribed studies, and securing an appropriate testimonial. (3) In the scientific department, there is a choice in the last year, and in the agricultural department in the last two years, between different courses. (4) There are, also, a number of options between particular studies. The course in the academic department is one of four years, and leads to the degree of Bachelor of Arts. The cost of tuition is $90 a year. Aid is afforded to indigent students chiefly in the form of scholarships, usually yielding $70 per annum, but in some cases $100. Of these there are (1876) more than 120. *The Chandler Scientific Department* was established by a resolution of the trustees, in 1852, in acceptance of the sum of $50,000, bequeathed to them in trust by Abiel Chandler for the establishment and support of a permanent department or school of instruction in the practical and useful arts of life, comprised chiefly in the branches of mechanics and civil engineering, architecture and drawing, the modern languages and English literature, together with book-keeping, &c. The course is of four years, and leads to the degree of Bachelor of Science. In the last year, there are two courses, — the general course and the civil engineering course. The cost of tuition is $60 a year. At the session of the legislature of New Hampshire in 1866, an act was passed establishing the *New Hampshire College of Agriculture and the Mechanic Arts*, on the basis of the congressional land grant, and authorizing its location at Hanover, and its connection with Dartmouth College.

The course of instruction embraces three years. During the first year, all the students pursue the same studies. At the beginning of the second year, they are required to select either the special course of agriculture or the course of mechanic arts. The degree of Bachelor of Science is conferred upon those who have completed the entire course of agriculture or mechanic arts and have passed the final examination. The cost of tuition is $30 a year. There are twelve free scholarships, covering the charge for tuition, one for each senatorial district, established in connection with the congressional grant. Several scholarships have also been established by the Hon. John Conant, one for each town in Cheshire County. There are other scholarships available to worthy applicants from any part of the state. There is an experimental farm of 165 acres in the immediate vicinity of the college buildings, which furnishes opportunity to the students for remunerative labor. The college has also recently purchased 200 acres of woodland adjoining the farm. The Thayer School of Civil Engineering was established in 1870, in pursuance of a donation of $70,000 from the late Gen. Sylvanus Thayer, for the establishment of a special course of instruction in civil engineering. It is essentially, though not formally, post-graduate. The course of study is of two years. The degree of Civil Engineer is conferred on those whose proficiency is such as to secure a recommendation from the board of overseers. The cost of tuition is $60 a year. The medical department was founded in 1797, and was formerly known as the New Hampshire Medical College. It has museums of anatomy, materia medica, and pathology. The degree of Doctor of Medicine is conferred after examination. Every candidate must be twenty-one years of age, have attended two full courses of lectures at some regularly authorized medical school, one of which must have been at this institution, and must give satisfactory evidence that he has devoted three full years to his professional studies, under the direction of some regular practitioner, the time spent at lectures being included. There is a lecture term as well as a recitation term. The fee for lectures is $77, and for recitations $40. The statistics for 1875—6 are as follows:

Departments.	Number of instructors.	Number of students
Academic	17	284
Scientific	17	76
Agricultural	14	29
Engineering	3	6
Medical	9	84
	—	——
Total (deducting repetitions)	35	479

According to the triennial catalogue of 1873, the whole number of *alumni* was 3,907, of whom 2,077 were living. The following is the list of presidents: Eleazar Wheelock, D. D., 1769—79; John Wheelock, LL. D., 1779—1815; Francis Brown, D. D., 1815—20; Daniel Dana, D. D., 1820—21; Bennet Tyler, D. D., 1822—28; Nathan Lord, D. D., LL. D., 1828—63; and Asa D. Smith, D. D., LL. D., the present incumbent, appointed in 1863.

In 1816, the state legislature vested the property of the college in a new corporation, and changed its title to Dartmouth University. This act led to the famous Dartmouth College case, in which Daniel Webster made his celebrated argument before the Supreme Court of the United States. That tribunal, in 1819, declared the action of the legislature void, as being in contravention of that clause of the constitution which prohibits any state from passing laws impairing the obligation of contracts.

DAVIDSON COLLEGE is situated in Mecklenburg Co., N. C., on the line of the Atlantic, Tennessee, and Ohio Railroad, twenty-three miles north of Charlotte. The name of the post-office is Davidson College. It was chartered in 1838, and is under the control of the Presbyterians. Its buildings contain spacious chapels, society-halls, and lecture-rooms, together with pleasant dormitories sufficient for a large number of students. Its libraries, cabinets, and apparatus are well provided for, and are constantly receiving accessions. The site of the college and of the adjacent village is remarkably healthy, being free from malaria and other local causes of sickness. The value of its grounds, buildings, and apparatus is $150,000; the amount of its productive funds, $85,000; of scholarship funds, $10,000. The college year is divided into two terms, and the cost of tuition is $30 for the first term, and $40 for the second. Candidates for the ministry are not required to pay for tuition while under the care of some Presbytery. The college has a classical course of four years, leading to the degree of Bachelor of Arts, and a scientific course of three years, leading to the degree of Bachelor of Science. Students not wishing to take a regular course, but to acquire a knowledge of particular branches are permitted to do so at the discretion of the faculty. In 1873—4, there were six professors, one adjunct professor, 117 students (classical, 98; scientific, 15; eclectic, 4), 9,000 volumes in the libraries, and 351 *alumni*. The presidents have been as follows: the Rev. R. H. Morrison, D. D., 4 years; the Rev. Saml. Williamson, D. D., 13 years; the Rev. Drury Lacy, D. D., 6 years; the Rev. J. L. Kirkpatrick, D. D., 6 years; the Rev. G. W. McPhail, D. D., LL. D., 5 years. There is now (1876) no president, Prof. John R. Blake, M. A., having been chairman of the faculty since 1871.

DAVIES, Charles, a noted American mathematician and teacher, born at Washington, Ct., in 1798; died at Fishkill, N. Y., in 1876. He graduated, in 1815, at the West Point Academy, and subsequently filled, in the same, the positions of tutor, assistant professor, and professor of mathematics, the latter from 1823 to 1837. He afterward occupied a similar position in Trinity College, Hartford, and subsequently in the University of the city of New York, and in Columbia College, of the latter of which he was made *emeritus* professor. Prof. Davies was chiefly known by his series of school and college text-books in the various departments of mathematical study, which have had a wide circulation. He also published *Logic of Mathematics*, and in connection with Prof. G. W. Peck, a *Mathematical Dictionary and Cyclopædia of Mathematical Science* (N. Y., 1855).

DAY, Jeremiah, a noted American educator and author, and the president of Yale College from 1817 to 1846. He was born in New Preston, Ct., Aug. 3., 1873, and died in New Haven Aug. 22., 1867. His chief publications were *An Introduction to Algebra* (1814), *Mensuration of Superficies and Solids* (1814), *Plane Trigonometry* (1815), and *Navigation and Surveying* (1817); also *An Inquiry on the Self-Determining Power of the Will, or Contingent Volition* (1838), and *An Examination of President Edwards's Inquiry as to the Freedom of the Will* (1841). President Day was a close and vigorous thinker, and as a teacher was distinguished for the clearness and simplicity of his methods of illustration. His kindness of heart and urbanity of demeanor secured the respect of all who knew him, both friends and pupils. An address commemorative of his life and services, was delivered in 1867, by president Woolsey, his successor in Yale College.

DEAF-MUTES, or Deaf and Dumb, a class of persons, scattered throughout every nation in a greater or less proportion, who cannot hear the sound of the human voice, and, consequently, lose that sympathetic association which exists between the organs of hearing and speech, so that the latter are rendered inactive. The decennial enumerations of the United States and Great Britain, and the censuses of most of the countries of continental Europe, have supplied statistical information as to the number of deaf-mutes. The proportion to the population is quite diverse, varying in Europe from 1 in 1,000 to 1 in 2,000. In the United States, the average proportion is 1 in 2380; while in England it is about 1 in 2,000. Hence, it is obvious that the actual number of the deaf and dumb is quite large. According to the census of 1870, the total number in the United States was 16,205, of whom 8,916 were males; and 7,289, females. The number between the ages of 5 and 20 was reported as 7,648. In many cases, they are deaf from birth; in others, the loss of hearing is caused by accident or disease at an early age, or in some cases, later in life; but deafness is almost always followed by a loss of speech, from disuse of the organs and a want of ability to modulate the voice. In the first few months of life, little difference can be perceived between the child who has its hearing perfect, and the one born deaf. The effect of sound is not often thought of by the parents and friends, in some instances, till the child is two years of age; and, even when deafness is suspected, the means employed to ascertain the fact are often such as to confound the nervous condition of the whole body with that of the portion solely connected with the ear. In former times, the little one was considered as a doomed being, and sorrow took the place of joy in the breast of the parents. Among some nations, deaf persons were regarded as being under the curse of Heaven. Among some barbarous nations, they were called monsters, and put to death when three years old, or as soon as their deafness was satisfactorily ascertained. They were considered by the Romans and some contemporary nations, if not as positive idiots, yet as deficient in intellect, and, consequently, were abridged of their civil rights; as we find in the code of Justinian. Condillac, at a comparatively recent period, denied them the faculty of memory and the power of reasoning. Many parents, even at the present time, consider themselves disgraced by having a deaf and dumb child, and studiously conceal the fact from the world. Such children have been, in almost every age, regarded as beings between man and the brute creation with respect to mental capacity and endowment; but, if we reflect but a moment, we shall find that the result of being deaf and dumb, is to be ignorant, not to be weak, —ignorant of science, ignorant of history, of morality, and, above all, ignorant of religion, and thus virtually "without God in the world." The limited circle of purely intellectual ideas which these unfortunates possess, is a natural consequence of their limited intercourse with those around them. They are shut out from communion with the world in things which interest others, from a knowledge of literature and history, and, in many cases, from all means of amusement. In some cases, it has happened that they have become idiots, consequent upon the non-employment of the natural powers of the mind. In other cases, they have become deranged by the indulgence of headstrong, impetuous passion, in the absence of a control of judgment; by fretful impatience at the dim perception of unknown or unattainable excellence seen in others; by a total unfitness for nearly all the occupations of their fellow beings; by an entire exclusion from the vast stores of knowledge displayed to their view in books; or by an ignorance of the truths of religion. All these causes operating upon a sensitive nature, may easily unsettle the reason.

Such was, and is, the sad condition of the uneducated deaf and dumb, and by many it was asserted to be irremediable. St. Augustine declared it was beyond the resources of art, and even the limits of possibility, to instruct the deaf and dumb; and, in proof of it, he quoted, *Romans*, x, 17, "Faith cometh by hearing, and hearing by the word of God." The poet Lucretius expressed in the following lines the opinion prevalent in his time:

> To instruct the deaf, no art can reach;
> No care improve them, and no wisdom teach.

Pliny, however, mentions that Quintus Pedius, a relative of Augustus, though a congenital deaf-mute, became a distinguished artist.

But a brighter prospect at last dawned upon these unfortunates. Research, observation, and philanthropy have overturned the opinions held by the ancients. Deaf-mutes are now acknowledged to possess intellectual faculties in common with other persons; and, although deprived of the sense of hearing and the faculty of speech, they are found to be capable of attention, of reflection, of memory, of imagination, and of judgment, as well as of the ability to communicate their thoughts, their desires, and their wants, to their more favored fellows.

According to the Venerable Bede, St. John of Beverley, bishop of Hagulstadt, taught a dumb man to speak. Bede also described a manual alphabet in his *De Loquela per Gestum Digitorum*. This book was first printed in 1532, and its plates showing the finger alphabet are probably the earliest illustrations of dactylology in existence. Efforts were made in the early part of the 16th century, to impart instruction to the deaf and dumb, but to only a limited number. The first systematic attempt to educate deaf-mutes was that of Pedro Ponce de Leon, at Ona, in Spain, about 1550, who taught two or three to read, write, and articulate. Later, Juan Pablo Bonet, also in Spain, taught a few, and published, in 1620, a treatise on the subject, with a manual alphabet, the same which is now used in Europe and America. (See BONET.) Some learned men in Italy also taught single persons; as Cardan, who instructed the prince of Carignan, and Pietro di Castro, who instructed the Prince of Savoy. A number of works on the instruction of the deaf and dumb were published in Spain, Italy, and Holland, before 1650. In 1653, Dr. John Wallis instructed two deaf-mutes, and was the first practical instructor of the deaf and dumb in England. In 1667, Van Helmont, a native of Holland, published a tract, entitled *Alphabetum Naturæ*, in which he explained the process of reading from the lips. The two-hand alphabet, now used in England, was invented by Dalgarno, in 1680. (See DALGARNO.) In 1749, Rodriguez Pereira exhibited some pupils before the Academy of Sciences, at Paris, who could read and converse audibly; but he kept his method secret, and it perished with him. In 1754, Samuel Heinicke taught one pupil successfully; and, in 1774, he opened a school at Leipsic, which was the first of the kind established by any civil government. This school still exists, and its success in teaching articulation led to the adoption of that system in most of the German institutions. In 1755, the abbé De l'Épée, through a fortuitous circumstance, commenced his labors among the indigent deaf and dumb, in France, and founded a school in Paris, which, after a few years, became the Royal Institution of France. He used the natural language of signs as the instrument of instruction. He was succeeded by the abbé Sicard, one of whose pupils, Laurent Clerc, accompanied Rev. Thomas H. Gallaudet to the United States, and aided him in establishing the American Asylum at Hartford, Ct., under the patronage of the New England states; and from that, institutions have sprung up in many of the United States. From these institutions, many deaf-mutes have gone forth into the world, and have become eminent in various walks of life. In our own country, we may name Le Clerc, as a teacher; Levi S. Backus, as an editor; G. W. Loring and W. Whiton, as teachers and writers; J. Nack, as a poet; E. J. Mann, J. R. Burnet, and A. Newsam, as writers; J. Carlin, as an artist; Alice Cogswell, as a writer; and Mary T. Peet, as a poetess.

The following table gives the name, location, etc. of all the institutions in the United States for the teaching of deaf-mutes, according to the Report of the U. S. Commissioner of Education for 1874.

Institutions for the Deaf and Dumb in the United States.

NAME	LOCATION	Date of foundation	CONTROL	No. of Pupils in 1874	No. of Instructors	Annual State appropriation	Value of grounds, buildings, &c.
American Asylum	Hartford, Ct.	1817	Directors	275	18	*	250,000
New York Institution	New York City	1817	Corporation	584	16	104,000	543,000
Pennsylvania Institution	Philadelphia, Pa.	1821	Directors	271	14	50,000	325,000
Kentucky Institution	Danville, Ky.	1823	State	103	6	17,000	125,000
Ohio Institution	Columbus, O.	1827	State	468	23	81,000	800,000
Illinois Institution	Jacksonville, Ill.	1837	State	430	15	72,000	340,000
Virginia Institution	Staunton, Va.	1839	State	96	7	40,000	160,000
Indiana Institution	Indianapolis, Ind.	1844	State	334	15	70,000	685,000
Tennessee School	Knoxville, Tenn.	1844	Trustees	136	7	28,000	150,000
North Carolina Institution	Raleigh, N. C.	1845	State	138	7	40,000	50,000
Georgia Institution	Cave Spring, Ga.	1845	Trustees	52	4	14,500	40,000
South Carolina Institution	Cedar Springs, S. C.	1849	State				
Missouri Asylum	Fulton, Mo.	1851	State	204	9	33,000	150,000
Michigan Institution	Flint, Mich.	1851	Trustees	197	10	52,000	375,000
Wisconsin Institution	Delavan, Wisc.	1852	Trustees	176	8	35,000	110,000
St. Mary's Institution	Buffalo, N. Y.	1854	Trustees	80	6	8,500	46,000
Louisiana Institution	Baton Rouge, La.	1855	Trustees	51	4	22,000	200,000
Iowa Institution	Council Bluffs, Iowa	1855	State	157	9	31,000	170,000
Mississippi Institution	Jackson, Miss.	1856	Trustees	51	3	15,000	50,000
Texas Institution	Austin, Tex.	1856	Trustees	44	2	10,000	50,000
Columbia Institution	Washington, D. C.	1857	National	113	12	88,000	500,000
Alabama Institution	Talladega, Ala.	1860	State	68	6	18,000	75,000
California Institution	Oakland, Cal.	1860	State	66	4	36,000	300,000
St. Bridget's Institution	St. Louis, Mo.	1860	R. Cath.				
Minnesota Institution	Fairbault, Minn.	1862	State	104	7	26,000	125,000
National Deaf-Mute College	Washington, D. C.	1864	National				
Kansas Asylum	Olathe, Kan.	1866	Trustees	80	5	16,500	33,000
Inst. for Improved Instruction	New York City	1867	Association	92	8		
Clarke Institution	Northampton, Mass.	1867	Private	70	7		
Maryland Institution	Frederick, Md.	1867	State	104	9	30,000	175,000
Arkansas Institution	Little Rock, Ark.	1868	Directors	84	4	33,000	55,000
Nebraska Institution	Omaha, Neb.	1869	State	35	3	16,000	18,000
Pittsburgh Day School	Pittsburgh, Pa.	1869	Municipal	43	2	2,000	45,000
Boston Day School	Boston, Mass.	1869	School Board.	65	6	6,000	
Whipple's Home School	Mystic River, Ct.	1869	Private	12	2	525	
St. Joseph's Inst. for Mutes	Fordham, N. Y.	1869	Private	40	6		35,000
West Virginia Institution	Romney, W. Va.	1870	Regents	52	4	25,000	60,000
Oregon Institution	Salem, Oreg.	1870	State	30	2		
Inst. for Colored Blind & Deaf-Mutes	Baltimore, Md.	1872	Trustees	12	2	10,000	20,000
School of Articulation	Aurora, N. Y.	1871	Private	6	2		17,000
Colorado Institute	Colorado Springs, Col.	1874	State	12	2	5,000	7,000

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* $175 per pupil from the New England States.

The first institution for the education of deaf-mutes in the United States was opened, as stated before, in Hartford, Ct., April 15., 1817, under the auspices of the Rev. Th. H. Gallaudet. (See Gallaudet.) Associated with him was Laurent Clerc, one of the most talented of Sicard's pupils, who had accompanied Mr. Gallaudet on his return to the United States after a visit to Europe, which he had made to acquire a knowledge of the methods of deaf mute instruction. At first, the Connecticut institution had only 7 pupils, but accessions during the year made the number 33. Congress, soon afterward, donated to it a township of wild land, the proceeds of which now form a fund of $339,000. This gift led to its assuming the name of *American Asylum*. The New York Asylum was opened in 1818. The fundamental principles on which nearly all the American institutions are conducted, are those first introduced by De L'Épée, modified as shown to be necessary in order to facilitate the acquirement of language and an advancement in knowledge. There are now about 250 schools for deaf-mutes in the world. In 1850, there were 227 in Europe, and 23 in America. The greater number in Europe teach articulation alone; while, in America, more dependence is placed upon acquiring the ability to use written language. The first regular school for deaf-mutes in Great Britain was that established near Edinburgh by Thomas Braidwood, and from this have descended the present public institutions for deaf-mute instruction in Great Britain. (See Braidwood, and Peet, H. P.)

Systems of Instruction. — Two methods or systems of teaching are in use (with some modifications) in nearly all the institutions in the world. One is that of *articulation* and *lip-reading* (sometimes called the German method, because used in most of the German schools), the other that of *writing*, or the *sign language*. Both have their special advocates; and each it is claimed, possesses superior facilities for educating the deaf and dumb. In teaching articulation, the pupil is placed before the teacher, who begins with the vowels, and requires the pupil to watch the motions he makes with his mouth, lips, and throat; he places the pupil's hand upon his own throat, so as to feel the different movements, and then imitate them himself. When he has succeeded in some degree, the consonants are introduced and practiced for a longer or shorter time, according to the ability or aptitude of the pupil. Simple words are then introduced, and their meaning illustrated by pointing out the object, action, etc.; and as progress is made in this, qualities and actions are introduced. This course must be continued, and the lessons repeated, till the pupil can read the lips of the teacher, and communicate his own thoughts, in questions and answers. Reading must then be taught; and the knowledge of language already acquired aids the pupil in understanding what he reads. It will be apparent that this is a work requiring much time and patience on the part of the teacher as well as of the pupil, merely to acquire the meaning of the words and their proper pronunciation. Most of the Institutions in the United States give more or less instruction in articulation, generally in special departments. The Clarke Institution, the Boston Day School, the N. Y. Institution for Improved Instruction, and Whipple's Home School make articulation a specialty. This mode of teaching is especially adapted to the condition of *semi-mutes*, who still retain some remnant of the ability to use spoken language. Experience has shown that children deprived of the sense of hearing can learn by means of sight and feeling, to distinguish the various elements of speech, to read them from the speaker's lips, and to imitate them in articulation.

The other method, writing and sign-making, is substantially taught in the following manner: An object is shown to the pupil, as for example, a *cat*, and the natural sign made for it, an outline is then drawn on the slate, and *c-a-t* is written in the outline; the same sign is applied to the name as was applied to the object and the outline; and the pupil thus learns the word. The object is removed and the outline rubbed out; the same sign is used for the word alone, and the pupil soon associates it with the object. Other objects are presented, and the same process repeated. The color of the cat is then taught: as, if black, that is joined to the name, and *black cat* is learned; then action is represented, as *black cat eats;* and then the object follows, *black cat eats meat.* The phrases are lengthened as the pupil proceeds, and short stories are related by signs, and written down by the pupil, the proper distinctions being made at the time, so that the pupil, in a short time, is enabled to use language properly. An important feature of this method is, that the pupil begins at once to learn words which convey meaning, without the slow process of learning the alphabet, the single letters of which convey no ideas; and in this manner the mind is quickened, and incited to redoubled activity by the knowledge gained. As this proceeds, the pupil becomes familiar with the printed as well as the written characters, and soon understands short simple phrases; and then only a few months are required to enable the pupil to understand clearly what is related to him. — See John Wallis, *Letter to Thomas Beverley* in the *Philosophical Transactions* (Oct., 1698); Joseph Watson, *Instruction of the Deaf and Dumb* (London, 1809); De l'Épée, *La véritable manière etc.* (Paris, 1784), English translation (London, 1801); *American Annals of the Deaf and Dumb;* Syle, *A Summary of the Researches etc. of H. P. Peet* (Wash., 1873); *Report of the Institution for the Improved Instruction of Deaf-Mutes* (N. Y., 1874); in the Appendix to which will be found a statement of the method of teaching articulation and lip-reading; *Annual Reports of the U. S. Commissioner of Education* for 1871, -2, -3, -4.

DEBATING is often employed as an exercise in schools for young men (and sometimes in those for the other sex), in order to afford a means for practice in extemporaneous speaking, and an incentive to the study and investigation of subjects of scholastic or general interest. When so used, it should be carefully regulated, both as to the questions selected for discussion and the manner in which the debates are conducted. The usual rules of debate should be strictly enforced, and the participants confined to the exact subject considered, and required to use language of undoubted propriety. The rules of parliamentary debate may be made a subject of formal study auxiliary to the practice of debating, and, in this way, the students partly prepared for public life. The *debating societies* connected with colleges have usually been considered a very important source of practical culture; "They are," says McElligott, "capable of splendid service in the course of education; and not only splendid, but peculiar; a service, in fact, for which it is impossible to find any sufficient substitute. Their appropriate sphere, morever, seems to be in connection with collegiate institutions. There, at all events, we have a right to expect from them the best possible results; for there they may have the benefit of wise and constant supervision." — See McElligott, *The American Debater* (N.Y., 1855); and *Debating, a Means of Educational Discipline*, in Barnard's *Journal of Education*, vol. III.

DECIMAL NOTATION, the ordinary method of expressing numbers on a scale of ten, ten units of any order being equal to one unit of the next higher order. The first lessons in arithmetic should give the pupil a clear idea of the principle of this notation. This can be done by means of the *numeral frame* (q. v.).

DECLAMATION, or the formal delivery of set speeches or of memorized pieces of oratory, is a school exercise of considerable importance, when conducted in a proper manner and with a due regard to its special uses and limitations. The objects chiefly to be gained by exercises of this kind are the following: (1) The training and culture of the voice; (2) Practice in elocution; (3) The habit of speaking in public with confidence, ease, and grace; (4) The cultivation of a taste for public speaking; (5) An improvement of the pupils' style of composition. In the education of boys and young men particularly, these are all points of great importance, inasmuch as the ability to speak effectively in public is of great value in all civilized communities. The practice of declamation may, however, be carried too far, and may thus engender an artificial style, and a taste for mere verbal and elocutionary display, without sufficient regard to the sentiment expressed or to the occasion of their utterance. Indeed, it has been held by some that those who have excelled as declaimers in school, have rarely become effective speakers in after life; but, if this is the case, it has resulted rather from the abuse of the exercise than from its legitimate use. There can be no doubt that long practice in declaiming exclusively memorized pieces may produce a habit that is calculated to interfere with the acquisition of the power of extemporaneous speaking; and, consequently, in the advanced stages of instruction there is need of resorting to exercises in offhand speaking in order to correct this tendency. In declamation, as in composition, the young and uncultured mind is prone to extravagance, particularly in the use of ornament. Those forms of expression and modes of delivery that are appropriated to the higher regions of thought and emotion are very apt to be brought in on occasions when their inaptness makes them ridiculous. As in composition, the pupil should be trained to express his thoughts in the simplest and most direct manner; so in declamation, he should be kept from the higher flights, except in special subjects, and be trained to moderation and self-restraint both in voice and action.

The following points should be carefully attended to in giving elementary instruction in declamation: (1) The piece to be declaimed should be well studied, not only in its language, but in regard to the thoughts, emotions, reasoning, etc. which it may involve, and the circumstances under which it was originally spoken, as well as the character of the speaker; (2) Minute rudimentary criticism should be rendered unnecessary by sufficient preliminary training in enunciation and other departments of elocution, as well as in the use of gesticulation; (3) The various kinds of gestures having been taught, the pupil should be allowed great freedom in respect to their use; (4) The spirit, and not simply the form, should be the object aimed at in the instruction; and no piece should be assigned to a pupil to speak which is beyond his capacity to understand and appreciate. The pupils of the common schools are generally not sufficiently advanced to receive theoretical instruction in rhetorical delivery; but this should find a place in the course of instruction of colleges, academies, and schools of a higher grade in general. Even the pupils of elementary schools, however, may be benefited by appropriate exercises in recitation and declamation; thus, the speaking of easy and interesting dialogues by two or more children will be found one of the best methods to impart to young pupils a practical knowledge of the elementary rules of declamation, besides cultivating a natural style of speaking.

DEFINITIONS, a branch of elementary education, generally used to designate instruction in the meaning of words. The operations of a child's mind naturally lead to a knowledge of words as representatives of ideas; and, at quite an early age, a child acquires a very extensive vocabulary of terms and the ability to apply them properly, since they are learned not by formal statement or definition, but by hearing them used, and by subsequent practice in using them in connection with the actual objects or conceptions which they represent. In this way, the words which young children learn make but little impression upon their minds as *words*; but they are so intimately associated with the objects, actions, and qualities which they represent, that they convey to the mind the same ideas as the objects, actions, etc. themselves. The school exercises or lessons designed to increase the child's vocabulary, or to teach the meaning of words found in books, often disregard this natural method of acquisition, and attempt to teach the meaning of individual words by means of their approximate synonyms, without any regard to their application, or use in phrases and sentences. Without an embodiment of words in actual speech, the recitation of formal definitions is of no use. After sufficient illustration of this kind, the pupil should be required to tell, in his own language, the meaning of the word in question, which the teacher can then correct. No exercise in synonyms is of any value, but on the contrary, rather injurious, until the meaning of words has been thus explained. In oral lessons in definitions to classes, one pupil may be required to use the given word in a phrase or sentence, another to explain its meaning, and another to give a brief definition by a synonymous phrase or word. Very simple words, the meaning of which is already known to the child, should not be given for formal definition; since properly to define such words, requires a nice discrimination in the use of language, and a minuteness of analysis beyond the capacity of a young child. A full exercise of this kind should comprise the following: (1) To pronounce it; (2) To use it in the construction of a phrase or a sentence; (3) To define it; (4) To write a sentence illustrating its meaning and use. [A written exercise for the whole class, each pupil writing a different sentence.] Instruction in the derivation of words and the meaning of the common prefixes and suffixes should be commenced at an early stage. (See Etymology.)

Every subject of instruction has its definitions, or precise statements of elementary truths, constituting the basis of the science; and it is an important consideration as to the proper time and method of teaching them. The teacher is very apt to err in requiring them to be committed to memory before the mind has been sufficiently impressed with the elementary ideas which they involve. In *How to Teach* (N. Y., 1873), we find this quite fully and emphatically expressed: "One of the most serious abuses to which the employment of elementary text-books is liable, is the practice of requiring the pupil to commit to memory, *verbatim*, all the definitions of a subject before teaching the subject itself, so as to enable the pupils to understand the nature of the things defined. It is, of course, most logical in the scientific treatment of a subject to place the definitions first, and the reasoning based upon them afterward; but this is not the order of investigation. The definitions are the results of an induction based upon the facts obtained by observation; they are generalizations of those facts, and are unintelligible to those entirely unacquainted with the facts themselves. Thus the order of investigation is *inductive*; the treatment is *deductive*, and in elementary teaching the method should conform rather to the former than to the latter. Give the pupil accurate and vivid conceptions of the facts, encourage him to observe the phenomena—to collect an experience of his own; tell him, or let him learn from the book, what has been discovered by the experience of others; and when the facts thus obtained form a sufficient groundwork, lead his mind to the proper induction, after which the definition, principle, or rule, based upon it, comes naturally, and will be thoroughly understood. The definitions thus taught should be brief and accurate in language, and, as a general thing, should be committed to memory *verbatim*; for great skill is required to construct a good definition, and it is of the greatest value to the scholar and thinker to have his mind well stored with these landmarks and guide-posts of knowledge." The distinction between the description and the definition of a thing should be kept in view by the teacher. The former may include a statement of all the qualities and properties of the object described; the latter should include what, being peculiar to the object, distinguishes it from all other objects of the same kind. At first, children should be taught rather by descriptions than definitions; for the latter, while forming necessary standards of judgment for the mind, generally do not give, of themselves, complete ideas of the things defined.

DEGÉRANDO. See Gérando.

DEGREES are titles of rank conferred upon students in colleges and universities, as evidence of their proficiency in the arts and sciences, or upon learned men as a testimony of their literary merits. At first, the terms *master* and *doctor* were applied indifferently to any person engaged in teaching in the university. In process of time, the term *master* was restricted to teachers of the liberal arts, and the term *doctor* to divinity, law, and medicine. When regulations were established to prevent unqualified persons from teaching, and an initiatory stage of discipline was prescribed, these terms became significant of a certain rank, and of the possession of certain powers, and were called *gradus*,—steps or degrees. The passing of the initiatory stage, said to have been first instituted by Pope Gregory IX. (1227—1241), conferred in any of the four faculties the title of *bachelor (baccalaureus)*, and an additional course of discipline and examination was necessary in order to obtain that of *master* or *doctor*. A degree intermediate between bachelor and doctor was that of *licentiate*. This is no longer in use in England, except in Cambridge, as a degree of medicine. In Germany the degree of *Licentiat* now exists only in the theological faculty. The title of Master of Arts originally implied the right, and even the duty, of publicly teaching some of the branches included in the faculty of arts; but this custom has now fallen into general disuse. The title of *doctor* seems to have been conferred, for the first time, in the 12th century, at the university of Bologna; and the ceremonial of investiture was drawn up by the learned Irnerius. The university of Paris almost immediately followed in the footsteps of Bologna, the first reception of doctors having taken place in the year 1145, in favor of Peter Lombard and Gilbert de la Porrée, the greatest theologians of the day. At a later period, the emperors were accustomed to confer upon the universities the right of appointing doctors of law by their authority and in their name. The example of the emperors was speedily followed by the popes, who conferred the same right in reference to the canon law. In England, the degree of *doctor* was not given until the time of King John (1207). In the middle ages, the title of Doctor of Laws conferred, in some countries, great privileges; and the possession of the title was requisite for some of the higher officers in church and state. In most civilized countries, the acquisition of the title of Doctor of Medicine is still required previous to an authorization, by the state government, of medical practice. The titles Doctor of Theology and Doctor of Law, or of Laws, have still to be acquired by professors of these branches of learning in universities and colleges; but they are also conferred *honoris causa* upon distinguished theologians, jurists, and statesmen. In the United States, the conferring of degrees is carried to an extent which was formerly unknown. While in Germany there are only about twenty universities which have the right to confer degrees, and in England a still smaller number, there are in the United States more than 300 chartered colleges which are entitled to this right; and they generally make a very liberal use of it at the annual commencement. All the graduates of American colleges and universities receive the degree of Bachelor of Arts, and after three years standing have the title of Master of Arts conferred upon them. The former is made contingent in the United States as well as in England, upon the result of a previous examination; but the latter is conferred, in due course of time, without any further requirements. In Germany, the title Master of Arts has fallen into disuse, and the philosophical faculty, which corresponds to the faculty of arts in the United States, confers, instead of it, the title of Doctor of Philosophy. In the nineteenth century, and especially in the United States, a number of new degrees have been created. The diploma of Doctor of Music is given in England, the United States, and Germany. Women have been, until very recently, the recipients of academic degrees in only very exceptional cases; but, with the progress of the superior education of females, and the admission of women to some of the highest institutions of learning, all the degrees which have so long been the monopoly of the one sex, begin to be accessible to both. (See CO-EDUCATION OF THE SEXES.) The annual reports of the U. S. Commissioner of Education afford complete statistics of all the degrees conferred each year by American colleges, universities, and schools. Below is given a list of the various degrees which were conferred in 1874, with the usual abbreviations employed to designate them.

The colleges for females confer, in the place of the title Bachelor (of Letters, of Arts, of Liberal Arts), the title Graduate, though they retain the abbreviations L. B., A. B., and B. L. A.

A. B., Bachelor of Arts.
A. L., Laureate of Arts.
A. M., Master of Arts.
A. S., Sister of Arts.
B. A., Bachelor of Agriculture.
B. Arch., Bachelor of Architecture.
B. C. E., Bachelor of Civil Engineering.
B. L. A., Bachelor of Liberal Arts.
B. M. E., Bachelor of Mining Engineering.
C. E., Civil Engineer.
C. & M. E., Civil and Mining Engineer.
D. B., Bachelor of Divinity.
D. C. L., Doctor of Civil Laws.
D. D., Doctor of Divinity.
D. D. M., Doctor of Dental Medicine.
D. E., Dynamic Engineer.
D. Sc., Doctor of Science.
L. B., Bachelor of Letters.
LL. B., Bachelor of Laws.
LL. D., Doctor of Laws.
L. Sc. Laureate of Science.
M. B., Bachelor of Medicine.
M. D. Doctor of Medicine.
M. E., Mining Engineer.
M. E. L., Mistress of English Literature.
M. L. A., Mistress of Liberal Arts.
M. L. L., Mistress of Liberal Learning.
M. Sc., Mistress of Science.
Mis. Mus., Mistress of Music.
Mus. B., Bachelor of Music.
Mus. D., Doctor of Music.
Ph. B., Bachelor of Philosophy.
Ph. D., Doctor of Philosophy.
Sc. B., Bachelor of Science.
Sc. M., Master of Science.
S. T. D., Sacrae Theologiae Doctor.

As the title Doctor of Medicine, when conferred by a medical faculty, alone entitles its holder in some countries to practice, attempts have, in many cases, been made by incompetent persons to purchase it, and by dishonest persons to make money by selling it. The greatest notoriety, in this respect, has been gained by a so-called faculty of medicine in Pennsylvania, which carried on the sale of the title of Doctor of Medicine for a considerable time, not only in the United States, but all over Europe, until the legislature of Pennsylvania put a stop to this nefarious business. In Germany, an article by the historian Theodor Mommsen (in *Preussische Jahrbücher* XXXVII. 1.) severely censured several of the universities of the minor states for promoting absent candidates who had merely sent in a written dissertation, and prostituting the honor of German science for mercenary purposes. The article produced a profound impression, and, early in 1876, induced all the incriminated universities to abolish the *promotiones in absentia*.

Many writers, in modern times, have maintained, that "degrees have always been, and must continue to be, utterly worthless." Among those who severely censured the way in which degrees formerly were and, in general, still are conferred, was Dr. Adam Smith, in his *Wealth of Nations*. The same writer more fully develops his views in a letter on Dr. Cullen, which is given in Dr. McCulloch's edition of that work. He contends that the value of a degree must always depend on the disinterested character of the parties who confer it, and that, therefore, the system hitherto pursued in universities of having academical distinctions awarded by the parties engaged in preparing the candidates to receive them, must be regarded as a wholly inadequate test of literary or scientific merit. A change in this system was inaugurated on the establishment of the London University (q. v.), in which the right of conferring degrees is vested in a board from which the professors are excluded. In Germany, a different reform has been proposed by Prof. Mommsen of Berlin, who, after severely denouncing the abuses existing in some of the German universities, urges in another essay (*Preussische Jahrbücher*, April 1876) the establishment of strict uniformity in the conferring of academical degrees. The universities favorable to reform are called upon to unite, and to request the governments either to recognize exclusively the degrees conferred by universities belonging to the union, or to abolish entirely the institution of academic degrees. In France, the right of conferring degrees was one of the most hotly contested points of the new law on superior education, adopted by the national assembly in 1875. This law abolishes the monopoly of the state faculties in conferring degrees, and gives the right possessed by state faculties also to special juries consisting of professors partly of the state faculties, and partly of the free faculties authorized by the new law.

DELAWARE, one of the thirteen original states of the American Union, having an area of 2,120 sq. m., and a population, in 1870, of 125,015, of whom 102,221 were whites, and 22,794, colored persons.

Educational History.—The original constitution of the state contained a general provision for the encouragement of education; but, through want of specific enactments on the part of the legislature, it was for a long time of little practical value. In 1813, the secretary of state, Willard Hall, suggested to the legislature a system of popular education; but no immediate action was taken. In 1829, a bill providing for the establishment of free schools was passed, embodying substantially the views suggested by the secretary of state, who has always been regarded as the founder of the present system. The law then enacted has remained, in all essential respects, the school law of the state to the present day, slight modifications only having been made from time to time. The constitution of the state, framed in 1831, declares it to be the duty of the legislature to provide for "establishing schools, and promoting arts and sciences." In 1837, the school fund of the state, established in 1796, was increased by the addition of the income of the United States surplus revenue fund. Up to 1852, the counties were divided into school-districts, to each of which full power was granted to establish a school or not, according to its pleasure. In 1852, the school law was revised by the legislature, but was not materially changed. Educational interests were left to the voters in each school-district, their action consisting in holding an annual meeting, at which any number of voters constituted a quorum. Their business was to elect a school committee, consisting of a clerk and two commissioners, and to decide, by a majority vote, what sum should be raised for a school-house, or a free school. The same year, an act was passed by the legislature for the benefit of the public schools in Wilmington, which, by this act, became permanently separated from the public school system of the state. In 1855, the property of colored people in Wilmington was exempted from taxation for school purposes. In 1861, a free-school act was passed, which authorized the levy of a yearly tax in each district of the state. By an act passed March 25., 1875, the school system was remodeled, and, in its general features, assimilated to that existing in most of the other states. The first state superintendent appointed was James H. Groves, in 1875.

School System.—The *state board of education* consists of the secretary of state, the auditor, the president of Delaware College, and the state superintendent of free schools. It holds an annual meeting at which the president of Delaware College acts as chairman, and the auditor, as secretary. It designates what text-books shall be used in the schools, settles all controversies between the state superintendent and the school commissioners on the one hand, and subordinate officers on the other, and issues uniform blanks for the use of teachers. The *state superintendent* is appointed annually by the governor. He visits each school once a year, examines and licenses teachers, keeps a full and accurate record of the schools, their condition, the number of pupils attending them, the qualifications of the teachers, methods of instruction, discipline, and all other matters necessary to the making of an annual report to the governor. *County superintendents*, one for each county, are appointed annually by the governor, their duties being, to correspond with school committees and teachers, "to aid them with advice, to supply proper forms, to collect information, and to report to the general assembly the state of the districts, and such matters as they shall deem proper." Three *school committeemen* are elected in each of the districts, one each year, the term of office being three years. Their duties are, to assess and levy the annual school tax, to select the sites for school buildings, to build school-houses, to supply furniture and fuel, to employ teachers, and to see that the schools are kept open as long as the funds will permit. The school committee levies in each district of New-castle Co. $100 for the support of the schools; of Kent Co. $50; and of Sussex Co. $30, the maximum additional amount in each being, according to the law of 1861, $400 for general school purposes, and $500 for the building and repair of school-houses. The schools are open to all white children over five years of age. In 1875, provision was made for the education of colored children, by the taxation of colored citizens, and the establishment of separate schools, from the proceeds of such taxation, by the Delaware Association for the Education of Colored People. The permanent school fund, which consists of the share of the state in the surplus revenue distributed by the general government among the several states, the proceeds arising from marriage and tavern licenses, and from various other sources, has yielded for several years an annual income of about $30,000.

Educational Condition. — The number of schools reported by the superintendent in 1875, was 369. The school revenue was as follows:

From local taxation	$159,733.68
" permanent fund	33,001.37
Total	$192,735.05

The expenditure *per capita* of average attendance was $9.64. The *school statistics* show the following:

Number of pupils enrolled	19,881
" " teachers employed	430
Average monthly salary of teachers	$28.23

Normal Instruction.—Special training is given to teachers in the Wilmington Normal School, and at Delaware College, Newark, in which a course has been organized for the purpose. The graduates of the former find employment principally in the schools of the city. It employs 3 teachers, and holds its sessions in the evening, and on Saturdays. The course provided for the training of teachers in Delaware College, by act of the legislature, in 1873, is open, free of charge, to 10 students from each county, who shall bind themselves to teach, after graduation, not less than one year in the public schools of the state. The time required for the completion of this course is 3 years. The branches pursued are those included in the literary course of the college, except Latin and modern languages, with special instruction in methods of teaching. Candidates for admission to this course are appointed by the members of the legislature. They must be not less than 16 years of age, of good moral character, and of average proficiency in English studies. Diplomas are granted at the end of the 3 years' course; while, for one year or more, but less than 3 years, certificates are given indicative of the proficiency acquired. The Delaware State Normal University, at Wilmington, was incorporated in 1867, for the purpose of supplying an advanced course to teachers. It was authorized to confer all degrees customary with universities, and to grant diplomas. The special degree of Bachelor of School Teaching was conferrable upon such students in the normal department as, upon examination, were found qualified, and the degree of Master of School Teaching upon such as had been actually engaged in teaching for 3 years after graduation. In 1871, however, the charter of the university was repealed, but the students held a meeting shortly after, at which it was resolved to continue the institution without state aid. It is divided into 4 departments: a primary school, a select school, a mechanical and commercial school, and a high and normal school.—*Teachers' Institutes* have been almost exclusively confined to the city of Wilmington. The new law, however, requires the state superintendent to hold one annually in each county for three days, all the teachers of the county being required to attend. The Delaware State Teachers' Association was organized in Wilmington, in December, 1875.

Secondary Instruction.—Graded schools exist in nearly all of the large towns of the state; and, in the city of Wilmington all of the schools are of this character. The course of study in the latter requires 3 years. The branches taught are those usually pursued in high schools, Latin and German having been added to the studies of the course, in 1873, though the study of them is optional. Graded schools, also, are in existence in Dover, Smyrna, Frederica, Milford, Georgetown, and Milton. Between 35 and 40 private, parochial, and charity schools and academies are known to exist in the state, many of which afford instruction usually classed as secondary.

Superior Instruction.— The only institution which affords opportunities to males for a higher education is the Delaware College (q. v.), at Newark. The Wesleyan Female College, at Wilmington, was organized in 1839. It has two regular courses of study, of 4 years each, a preparatory and a collegiate, besides partial courses for special purposes. It has a library of 3,600 volumes, and, in 1873, reported 8 professors and instructors, and 137 students.

Professional and Scientific Instruction.—The agricultural department of Delaware College furnishes instruction to such students as intend to devote themselves to the business of agriculture, while they, at the same, time attend to the studies that constitute a liberal education. The grant of 90,000 acres, made by Congress to the state for the founding of an agricultural college, has been given to this institution. It provides a scientific and an agricultural course, admission to which is granted to students of good moral character who are 14 years of age, and who successfully pass an examination in geography, arithmetic, the elements of algebra, English grammar, history of the United States, and "such branches as form the basis of a complete English education." The time required for the completion of each course is 3 years, the instruction in the agricultural department being supplemented by practical exercise in farming, gardening, and the work of the nursery. The degree of Bachelor of Philosophy is conferred by the scientific department; that of Graduate in Agriculture, by the agricultural department. In 1872, the admission of females to the college classes was authorized, the conditions of admission being the same as in the case of males. The result is said to have been very satisfactory. No special provision is made by the state for the instruction of the deaf and dumb, the blind or the imbecile; each county caring for its own, or the state bearing the expense of their care in the institutions specially provided for the purpose by the neighboring state, Pennsylvania.

DELAWARE COLLEGE, at Newark, Del., was chartered in 1867 and opened in 1870. It includes the state agricultural college, established by the congressional land grant. The value of its grounds, buildings, and apparatus is $50,000; the amount of its productive funds, $83,000; the number of volumes in its libraries, 6,000. The farm of the professor of agriculture, embracing about 70 acres of well-improved land adjoining Newark, is used as an experimental farm. Agricultural students have the opportunity of defraying a part of their expenses by labor. The cost of tuition in the institution is $24 for the first term of the year, $18 for the second, and $28 for the third. Each county in the state is entitled, by a law passed in 1869, to have ten students educated at the college free of charge for tuition. The members of the legislature are vested with authority to make these appointments, each member having the right to make one nomination.

In 1872, the trustees authorized the admission of females to the college classes upon the same conditions as male students. There are four courses: the *classical*, of four years, leading to the degree of Bachelor of Arts; the *scientific*, including agriculture, of three years, leading to the degree of Bachelor of Philosophy; the *literary*, of three years, leading to the degree of Bachelor of Literature; and the *normal*, of three years. Those not desiring to take any one of the regular courses may pursue selected studies. The literary course is similar to the classical, but omits the higher mathematics, and substitutes one of the modern languages for Greek. It is specially designed for female students, but may be pursued by all such as prefer it to any one of the other courses. The course of study in the normal department embraces all those branches of learning which are included in the literary course, with the exception of Latin and the modern languages, for which is substituted instruction in the higher essentials of a thorough English education, and in the best and most approved methods of teaching. Students who obligate themselves to teach in the free schools of the state for not less than one year receive tuition free. In 1874—5, there were 8 instructors and 54 students in Delaware College. At the commencement in 1875, 12 degrees were conferred; namely, A. B., 3; Ph. B., 4; B. L., 5. William H. Purnell, LL. D., is (1876) the president.

DELPHIN CLASSICS, an edition of the Latin classics prepared for the use of the dauphin (*in usum Delphini*) by order of Louis XIV., under the editorship of Bossuet and Huet, tutors to the dauphin. The compilers, 39 in number, were selected by Huet from the best scholars of the time. The plan of the work comprises a continuous gloss in the margin, and copious foot-notes, explaining the text. The different works are edited with very unequal merit; and, as a whole, the series has ceased to have any special value in comparison with more recent and more accurate editions. — See HALLAM, *Literature of Europe*, vol. II.

DENISON UNIVERSITY, at Granville, Ohio, under the control of the Baptists, was founded in 1831. The buildings, three in number, are situated on a hill, north of the town, less than 600 yards from the public square, the site containing 24 acres, nearly half of which is occupied by a grove of old forest trees. The university and society libraries contain about 11,000 volumes. The cabinet contains a good collection of shells, and of specimens in geology, mineralogy, zoölogy, and archæology. The value of its grounds, buildings, and apparatus is $90,000; the amount of its productive funds, $190,000. The university comprises a preparatory department and a collegiate department, the latter having a classical course of four years, leading to the degree of Bachelor of Arts, and a scientific course of three years, leading to the degree of Bachelor of Science. The cost of tuition in the college is $13 for the fall term, and $10.50 each for the winter and spring terms; in the preparatory department, it is $10 and $7 respectively. Students for the ministry may be received as beneficiaries of the Ohio Baptist Educational Society, which supplies them with from $80 to $150 per annum besides free tuition. In 1875—6, there were 9 instructors, and 71 collegiate and 80 preparatory students. The number graduating in 1875 was 9. The Rev. E. Benjamin Andrews, A. M., is (1876) the president.

DENMARK, a kingdom of Europe, has an area of 14,753 sq. m., and, in 1874, had a population of 1,874,000. Almost the entire population (over 99 per cent) belongs to the established Lutheran Church; and all public religious instruction is, accordingly, based on the original Augsburg confession.—Few countries have undergone so many vicissitudes of fortune as Denmark. During the middle ages, it was one of the most powerful empires of northern Europe. Jutland and the Danish isles became the early home of a warlike Gothic tribe, the piratical Danes or Normans. King Gorm the Old subjected all the chieftains to his sovereignty in the beginning of the 10th century. Canute the Great, after 1024, extended the Danish rule over Norway, southern Sweden, and, for a short period, even over England. Under the two Waldemars, in the 12th and 13th century, Mecklenburg, Holstein, Pomerania, and the present Baltic provinces of Russia were added to the empire. During the civil wars following their reigns, many of these conquests were lost. The so-called Calmar Union of 1397, by which Queen Margaret united Denmark, Sweden, and Norway, was of short duration. Under Christian III., in 1537, the Reformation was introduced. In 1660, southern Sweden, and in 1814 all Norway was ceded to Sweden; and by the unfortunate war of 1864, against Austria and Prussia, after which the duchies of Schleswig, Holstein, and Lauenburg were re-united with Germany, the area of the kingdom was reduced to its above-stated extent (exclusive of Iceland, the Faroe isles, and the colonies). Owing to the new liberal constitution of 1849 (revised in 1865), the industry, commerce, and finances, as well as the literary and educational institutions of the country are at present in a flourishing condition.

History of Public Instruction.—With the introduction of Christianity, in 965, convent and cathedral schools were opened; and, since the twelfth century, while Latin was the only written language of the time, "Latin schools" for clerics and laymen of the higher classes and trades, were established in Viborg, Ribe, Odense, Copenhagen (1640), and other towns. These institutions were greatly improved by the church-reformers, after 1537, who instituted two grades of Latin schools, both under the supervision of the clergy, those of the lower grade being also thrown open to the children from the country. A third grade of schools for poor boys and girls, the so-called "writing-schools" (*scholæ vulgares*), excluding instruction in Latin, were supported and controlled by the municipal authorities. In the rural districts, the only instruction imparted to youth consisted in teaching the catechism, in weekly lessons, given in one of the largest residences, either by pupils of the highest class of the nearest Latin school, on Saturdays, for a remuneration of free lodging and board, or by the sextons, or by students of theology. The 18th century is marked by a quick succession of important steps toward the perfection and extension of the system of instruction. Bishop Thestrup of Aalborg caused six parish schools to be established in Copenhagen. King Frederick IV. (1699—1730) had 240 substantial school-houses built on the royal domains, each containing a school room and a dwelling for the teacher. A royal decree of 1721 regulated the organization of these schools, fixing the salary of the teachers, making religion and reading obligatory, writing and arithmetic optional studies, and requiring the children to attend school, from their 5th to their 8th year, every day for 5 or 6 hours, and after this period, only half a day. The royal example was followed by many noblemen and landed proprietors, who established similar schools on their estates for the benefit of the children of their tenants. The supervision of all these schools was assigned to the clergy; but a general system of public instruction was not introduced until 1739, by a decree of Christian VI. (1730—1746), ordaining the establishment of common or parish schools in every larger village, where religion, reading, writing, and arithmetic were to be taught by school-masters qualified before the clergyman. The schools were to be supported by a revenue fund, collections, fines, and a school tax. About 30 Latin schools, in the smaller towns, were abolished, and their funds appropriated for the common-school fund. The general introduction of this new system was, however, thwarted by the opposition of many landed proprietors, who maintained their territorial autonomy in school matters. A new and liberal era was inaugurated under Frederick VI., by the school law of July 29., 1814, the principal features of which are still in force. It ordained the establishment of elementary schools, each of two classes, in the country in every neighborhood capable of supporting a school, and of two schools in all the larger villages; of an elementary burgher school, and, if feasible, also of higher schools and evening classes for adults in every town. Attendance was made obligatory. Four new seminaries for the education of qualified teachers were erected at Skaarup, Lyngbye, Jelling, and Ranum, in addition to that of Joenstrup, which was founded in 1791. In 1828, gymnastics were introduced into all the schools of the country. A decree of 1838 created higher burgher schools in all the towns. In 1850, the gymnasia of Nyborg, Slagelse, Nakskow, Vorsingborg, and Elsinore were transformed into higher real-schools. The laws of 1850, 1864, and 1869 regulated the examinations for admission to the university of Copenhagen, which received its fundamental statute as early as 1788.

Primary Instruction.—The general supervision of the primary schools is in the hands of the ministry of instruction and ecclesiastical affairs, while each one of the seven bishops superintends the schools in his diocese. They appoint all teachers in the rural districts, while the school board of the *Amt* (a subdivision of a diocese) appoints the teachers in the cities. The ministry of instruction and ecclesiastical affairs consists of two departments, one for ecclesiastical affairs, the primary schools, the normal schools, and the asylums for the blind and deaf-mutes; and the other for the institutions for secondary, superior, and special instruction, the libraries, the scientific and art collections, the academy of fine arts, the royal theater, and the general administration of the ministry. A third department was organized temporarily, in 1855, for the elementary schools, but was abandoned again in 1866. The immediate supervision of each school in the country is in the hands of the district school board, composed of the clergyman and representatives elected from the parish. Above this is the school board of the *Amt*, composed of the *Amtmand* (bailiff) and the clerical superintendent. In the cities, the immediate supervision is in the hands of a board consisting of the clergyman, the mayor, and a number of citizens elected to that position. The duties of this board coincide with those of the district school board in the rural district, while the other authorities are common to both city and country. Education is compulsory according to the laws of May 2., 1855, and Sept. 30., 1864. Every child must attend school from the seventh year of age, and the parents are forced by fines to comply with this law; but no child is admitted under six years of age. After the thirteenth year, a child may be dismissed upon the wish of its parents, if, in the opinion of the school board, it has received a sufficient amount of education; and, after the fifteenth year, it must be dismissed upon the demand of its parents. The school hours are, in summer, from eight to eleven in the morning, and from one to four in the afternoon; and in winter, from nine to twelve in the morning, and from one to four in the afternoon; but few rules are laid down for the management of schools, and only very few schools have printed rules. For disrespect and disobedience, teachers may resort to corporal punishment, while laziness and truancy must be reported to the rector or principal of the school, who inflicts a proper punishment in such cases. School diaries have been introduced in all the classes except the highest. For every recitation the scholar receives a mark expressed by a number, 6 being the highest, and 0 the lowest. At the end of every month, the marks are added up, and the standing for each ensuing month is thus determined. In the highest class, the daily marks are discontinued, and a monthly report is given instead. While the length of the school term is generally left to the separate school boards, the royal decree of Jan. 27., 1860, fixed 240 days in the year as the minimum for every school. A general model course of studies for the kingdom does not exist. Every teacher prepares his own course of studies, which must be approved by the school board. An equal freedom prevails in regard to the choice of text-books, and in the methods of teaching used. In 1819, the monitorial or Lancasterian system was introduced into the military school in Copenhagen, by a young officer who had observed it in France. The king took great interest in the experiment, and in 1822 the system was recommended for introduction into all elementary schools. It was, however, severely attacked by Diesterweg (see DIESTERWEG), and gradually fell into disuse, being greatly modified in those schools in which it still exists. Almost every town has, besides the elementary schools, at least one higher primary school, or *burgher real school*, in which a small fee is charged. The course of instruction in these schools embraces the following subjects: Danish language, religion, arithmetic, penmanship, book-keeping, the rudiments of algebra, geometry, natural history, natural philosophy, Danish and general history, geography, either German, French, or English, and geometrical drawing, singing, and gymnastics. The number of primary schools in the country, in 1867, was 2,781, the number of male teachers 2,929, female teachers 59, the number of children of school age 200,761, the number of children attending public schools 194,198, and the number of children attending private schools 13,994, making the total number of children under instruction 208,192. The cities had, in 1867, 113 primary schools, with 422 male and 54 female teachers, and 23,352 scholars, of whom 6,161 attended the burgher real schools. The salaries of the teachers in the cities differ considerably from those paid in the country; but both in city and country, they compare very favorably with the salaries paid in other parts of Europe. In the country, the remuneration consists of a fixed salary, paid partly in money and partly in grain, which is changed into money according to the average price of grain for the past ten years, which price is determined annually. Teachers also receive, for their services as sextons, the sum of three marks (1 rix-dollar @ 6 marks = $0.55.3), payable by every child; and there is an increase of salary, according to age, of from twenty-five to fifty rix-dollars. Every teacher has a house free, which must be kept in repair by the parish, and a certain amount of school land, and he receives fuel, and such provisions as eggs, milk, etc. Every ten years, the ministry determines for each position the money value of all receipts, based on the average prices for the preceding ten years. In 1867, the total amount thus determined was 1,370,914 rix-dollars, which, for 2,566 teachers, gave an average salary of 534 rix-dollars. According to the law of 1856, one half of the teachers in every city receive, besides free lodging, not less than 300 rix-dollars and 50 tons of barley, while the other half receive not less than 150 rix-dollars and 50 tons of barley, so that no teacher receives less than 300 rix-dollars, taking everything into account. The average salary of the teachers in the cities, in 1867, was 690 rix-dollars. Teachers throughout the kingdom are exempt from military duty. Denmark has five seminaries for teachers, — in Joenstrup, with 51 pupils; in Skaarup, with 75 pupils; in Lyngbye, with 31 pupils; in Ranum, with 31 pupils; and in Jelling, with 45 pupils; making 233 pupils. Every seminary has three classes, the course of each class comprising one year. No pupil is admitted to the lowest class under 17 years of age. The course of studies is as follows for all three classes: religion; reading and the Danish language and literature; arithmetic and other branches of mathematics; penmanship; history and geography; natural history; lessons on education and instruction; music; gymnastics; drawing; catechisation. For some years past, there have been established, in various parts of the country, *Peasants' High Schools*, which are attended by young farmers who come together at their own expense during the winter months. In these schools, lectures are delivered on the history and institutions of the kingdom, and the sciences relating to agriculture. The plan of instruction depends chiefly on the wishes of the pupils and the capacity of the teachers, who are generally graduates of the university. Of these schools, there were, in 1874, 49, with 2,132 male and 1,003 female pupils.—In Copenhagen, the primary schools have three classes, the two sexes are instructed separately, and the course of studies is a little more extended than that in other cities. According to the law of 1844, modified by that of 1857, the schools are governed by a board of school directors, composed of the chief magistrate of the city, the burgomaster who has charge of school affairs, and a clergyman of the city appointed by the minister of instruction. The immediate supervision is in the hands of a superintendent, who has a seat but not a vote in the board of directors. Every ward of the city and suburbs has, furthermore, its own school committee of three members. The schools are partly free and partly pay schools. They are of two kinds,—those consisting of day classes in which the school time is six hours per day, and half-day classes which are taught only four hours per day. On May 1., 1874, the aggregate number of pupils in the schools of Copenhagen was 22,747, while the number of children of school age was 27,275. Of the 4,428 children who attended no school, 4,286 received private instruction. At the close of 1873, there were 149 private schools, with 11,729 pupils. Of these schools, thirteen received aid from the state. School libraries have been introduced in all the schools. They are supported partly by the pupils, and partly by state aid, and are under the control of the teachers.

Secondary Instruction.—By the church act of 1537, Latin schools, of from three to four classes, were founded in all the cities of Denmark. Owing to the different wars and from other causes, the condition of these schools was not very favorable, until, in 1739, Christian VI. considerably diminished their number, and thus obtained the necessary means to improve the financial standing of those remaining. At the same time, the course of instruction was extended, and the Danish language introduced as a study, and in some cases as the vehicle of instruction, while, up to that time, instruction had been given in the Latin language only. Under Christian VII., the course of studies was more definitely regulated, and instruction in the Danish language was introduced into all the schools. The schools then made steady improvement, until, in 1850, they received their present form. The institutions for secondary instruction now comprise gymnasia, fashioned after the German model, some of which also have real classes; burgher schools, corresponding to the German real schools; and private schools. The course of instruction embraces a period of nine years. Pupils upon entering must be at least ten years of age, and must pass a satisfactory examination in various branches. The course of study in the gymnasia comprises, besides a continuation of the studies of the elementary schools, Latin and Greek, one or more modern languages, natural history, and natural philosophy. The course of study in the burgher schools, comprises Danish, French, German, English, history, geography, arithmetic, geometry, natural history, penmanship, and drawing. The total number of secondary schools at present is 26, of which 15 are gymnasia, 5 burgher schools, and 6 private schools. The number of teachers, in 1873, was 163 in the gymnasia, 6 in the burgher schools, and 145 in the private schools, making a total of 314. The number of pupils, in the same year, was 1629 in the gymnasia, 410 in the burgher schools, and 1437 in the private schools, making a total of 3,476. The amount paid for salaries of teachers, in 1871, was 249,151 rix-dollars. Among the oldest and wealthiest secondary schools of the kingdom, are those of Soröe and Herlufsholm. The school at Soröe was founded in 1580. In 1749, it was changed into the Knights' Academy. Afterwards, a classical school was added; and, in 1849, the academy was discontinued, so that only the classical school remained, which, in 1870, had 160 scholars. The school at Herlufsholm was founded in 1565, and, in 1870, had 95 scholars.

Superior Instruction.—The University of Copenhagen was founded in 1478—9; and at present comprises four faculties,—theology, law, medicine, and philosophy. It has a well equipped laboratory, a botanical and zoölogical garden, a museum of natural history, an astronomical observatory, and a library of 250,000 volumes. In 1873, it had 51 professors and about 1200 students.

Special Instruction.—The schools for special instruction are as follows: A royal veterinary and agricultural school, with 16 professors; a polytechnic school, with 13 professors; two academies of fine arts; a technical school; and Sunday improvement schools. Besides these institutions, all of which are situated at or near the city of Copenhagen, there are eight schools of navigation at various places.

Iceland, a dependency of Denmark, was first settled about 870; it became subject to Norway in the beginning of the twelfth century, and to Denmark in 1380. The first formal school was established upon the introduction of the Christian religion, near the end of the 10th century (981). At present, the instruction is altogether domestic; but as the clergymen are forbidden to solemnize the marriage of any female who is unable to read, very few natives of Iceland are found who cannot read or write. The only public school in Iceland is the college at Reikiavik, which has six teachers and a library. Latin, French, and German are taught in the college; and it also has a theological course.—See SCHMID, *Encyclopädie*, vol. x.; BARNARD, *National Education*, vol. II.

DENOMINATIONAL SCHOOLS are schools either under the control of a particular religious denomination, or that give religious instruction according to the dogmatic tenets of some particular church or sect. Denominational schools that are under the direction and supervision of the church authorities of a parish, are called *parochial schools* (q.v.). The question whether the schools supported by the state should have a denominational character or not, is one of the most important educational controversies of the present age, in the United States as well as in almost every country of Europe. The public-school system has been developed in close connection with both church and state; and, in Europe, until a recent period, it has been the general rule to give to the public school a denominational character. The course of instruction of these schools includes instruction in the creed of a particular religious denomination, to which, moreover, all the teachers of the school must belong. The Catholic Church, especially, insists that every school, from the lowest primary up to the university, should bear a distinctively denominational character, and should provide for religious instruction as a part of the regular course. The orthodox and conservative Protestants in Germany and in other countries of the European continent, generally take the same view, but more in regard to the common schools than to secondary schools and universities. Among the Liberal party, on the other hand, there is a growing demand for the exclusion of all instruction in the tenets of a particular religion from the state schools, and for the abolition of every religious distinction in the appointment of teachers. They demand, in the place of the denominational schools (in Germany called *Confessionsschulen*), "communal" or "national" schools; but they differ among themselves as to whether religious instruction is wholly to be excluded. Some desire that there should be instruction in the general principles of religion and morality, instead of instruction in a denominational creed, while others prefer the total exclusion of religious teaching. (See DIESTERWEG.)

The Catholic cyclopædia of education by Rolfus and Pfister (*Real-Encyclopädie des Erziehungs- und Unterrichtswesens*, art. *Communalschulen*) adduces, among others, the following arguments in behalf of denominational schools. The public school is intended not merely to impart instruction, but to take part in the work of education. Its educational function is not of a preparatory or continuing character, but it is to aid and to accompany home education. The latter is based on religion, without which a good education is impossible. A school which does not provide for religious instruction and education, subjects a child to influences directly in conflict with the education received at home.—Religious instruction is, more than any other branch, suited to initiate a child into an understanding of abstract ideas. It offers the most interesting material for exercises in reading and writing, and for the development of the intellectual as well as the emotional faculties of the child. It is unquestionably better suited than mere exercises in reading, writing, and arithmetic, to establish a bond of affection between teacher and pupil. In the eyes of the immense majority of people, instruction in their own religion is the most important and the most desirable that can be given to their children; and, hence, the authority of a teacher who is not permitted to give religious instruction, must be lowered in their estimation. The public school is supported by those who have the right to demand that the subject to which they attach the greatest importance should not be excluded from the course of instruction. The strong convictions of a teacher manifest themselves chiefly in his religious belief. Schools, therefore, which compel the teacher to repress everything that reflects his religious convictions, may be expected to have as teachers few persons of firm principles. Where state and church are allied in the supervision of denominational schools, the state government fully knows what ideas of good and bad, of virtue, or of conscience are taught; but where teachers are appointed without regard to their religious views, and where the church is excluded from superintending the instruction, it will be impossible to keep out of the schools the most destructive views of religion and morality, which teachers without religious principles will find it easy to inculcate indirectly on many occasions. When undenominational schools are the rule in a community, very many parents are dissatisfied, and private institutions, combining religious with other instruction, flourish. But it is not for the interest of the state that a large portion of the population should, in a demonstrative manner, express its want of confidence in state institutions, and patronize schools which have been organized for the express purpose of neutralizing the effect aimed at by the legislation of the state.

The Protestant cyclopædias of education edited by K. A. Schmid (*Encyclopädie des Erziehungswesens etc.*, and *Pädagogisches Handbuch*, art. *Confessions- und Communalschulen*), take the same view. The *Pädagogische Handbuch* says: "Religious school instruction is specially a want of the evangelical child. The church of the Word builds itself up by the understanding and recognition of the Word; therefore her children must be supplied with religious knowledge; Bible history, the most beautiful sentences of the Bible, and the fundamental doctrines of the Gospel must be inculcated for belief and practice in life; the treasure of the songs of the church must be opened to them for edification; and they must learn to join in the chorus of the congregation. The Catholic Church, with a form of worship which captivates the senses, with its religious ceremonies, into which even small children are introduced, and which are constantly practiced by its members, produces naturally a certain religious habit, which interweaves itself with the ideas and emotional tendencies, and thus proves a strong bond of union for the church. With us, the mind is chiefly addressed to impress religious convictions; and, hence, to exclude religious instruction from our schools must fatally injure the religious, moral, and ideal life of our Protestant congregations."

The advocates of denominational schools also point to the fact that the results thus far obtained by the undenominational school have failed to satisfy even the most zealous among its defenders. One of the leaders of the Liberal party of Prussia, Miquel, in a speech made in the Prussian house of deputies, March 12., 1875, said: "The system of undenominational schools in the Netherlands, which prohibits teachers from giving religious instruction, but provides that time and permission be given to the pupils to receive religious instruction from the clergymen of the several denominations to which they belong, was introduced under the liberal ministry of Thorbecke. This great statesman subsequently saw and acknowledged to me, that the system, instead of promoting friendly relations between different religious denominations, had widened the breach. The pupils of the public schools either received no religious instruction at all, or being instructed by clergymen, became more attached to denominational differences, than would have been the case, if the religious instruction had been given by the school-teacher."

But although the fruits of the undenominational school system in Holland and elsewhere have failed to satisfy its friends, public opinion in Europe appears to be abandoning more and more the old system of denominational schools. The new school law of Austria, of the year 1868, recognizes the principle of national or communal schools, though it authorizes the churches to establish their own denominational schools. In Bavaria, the new law of 1873 gives to town councils the power to consolidate the existing denominational schools, and thus to form undenominational communal schools; and many towns have made haste to avail themselves of the privilege. The leaders in the great conflict of the state governments of Europe with the Catholic Church concerning the public school, all favor, more or less, the undenominational school. In England, where the traditional distrust of the government in matters relating to the school is still very apparent in the actual condition of school matters, an immense majority of all the schools deriving support from the government, bear a strictly denominational character. The advocates of *secularism* in state education are, however, becoming more numerous and more powerful; and even those who favor *denominationalism* are beginning to endorse the underlying principle of undenominational state education. Says Dr. Rigg, in *National Education*, "It must be admitted that, if the state is to interfere at all directly in the matter of popular education, its own function and responsibility should certainly be limited to that which is unsectarian, and, if it were possible, would most conveniently be limited to that which is secular, in instruction and results. Here I find myself, in principle, pretty well agreed with the secularists. It is where they would forbid the co-operation of Christian organizations and of Christian teaching, otherwise provided, with the functions and work of the state in popular education, that, in common with most others, I am obliged to differ."

In the United States, the undenominational character of the public school has always been its most distinctive feature. The teaching of the doctrinal tenets of particular denominations is every-where excluded from the course of instruction. In many states, as in Arkansas, Illinois, Kansas, Kentucky, Massachusetts, Nevada, Nebraska, New Jersey, New York, Ohio, South Carolina, and Wisconsin, the constitution of the state expressly forbids sectarian instruction and control. But even where the constitution of the state has not sanctioned the principle by a special provision, the practice is universally the same. The growth of the undenominational school was the natural fruit of the voluntary system which pervades all American institutions, and which, in particular, excluded the influence of the state from all religious matters. Although in the United States there is no state church, as in the states of Europe, a larger number of religious denominations than are found anywhere else, live together in the possession of equal rights. The co-existence of various denominations in almost every one of the numerous small townships which do not need more than one school, would have made the establishment of a number of schools a practical impossibility. Moreover, the separation between church and state has caused Americans generally to look upon religion as upon something belonging exclusively to the family and to the church. The proper places to provide for religious instruction appeared, therefore, to them to be the family and, especially, the Sunday-school. The only religious element which a very large portion of American educators desire to retain in the common schools, is the reading of a passage of the Bible, and the opening of the school by prayer. Among the Protestants of the United States, this view has still decidedly the ascendency; and several state constitutions expressly provide that the Bible shall not be excluded from the public schools. (See BIBLE.)

The most earnest and united opposition to the undenominational American school is made by the Roman Catholic Church. It disapproves the practice of having the Bible without note or comment, read by or to the pupils; it complains of the reading of a Protestant version of the Bible to Catholic children as an injustice; but it still more objects to any system of instruction which excludes the teaching of religion from its regular course. It has, therefore, put forth the claim for a division of the school funds of the state among all religious denominations in a fair proportion, in order that it may be used by them for the support of denominational schools. This claim of the Roman Catholics has led to a protracted and interesting controversy, which is not yet ended. The fundamental principle on which the claim is based, that, from an educational point of view, it is desirable to include religious teaching in the regular course of instruction, has been conceded by not a few of their opponents; and cases have not been wanting in which Protestant congregations have asked for the support of their denominational schools out of the public funds. Some eminent statesmen also, like Wm. H. Seward, were disposed to recognize the Catholic demand as being, in the main, fair, and to concede it. Public opinion, however, in the progress of the controversy, has taken a very determined stand in opposition to the Catholic view and in favor of the undenominational school. The majority of the American people, at the present time, undoubtedly hold that religion is a matter entirely voluntary and individual, which every person should regulate according to the dictates of his own conscience, and in which the public authorities should in no way interfere; that churches, in the eyes of the state, are only voluntary associations of families holding the same religious views; and that the rearing of children in any religious tenets whatever, should, therefore, be left wholly and exclusively to the families and the churches; that the families have it in their power to supply, in Sunday-schools, all the religious instruction they desire their children to receive; that the state has no right to tax people for ecclesiastical objects; and that the exclusive aim of schools supported by the public funds should be to fit their pupils for the discharge of their civil obligations. To the most interesting episodes of this conflict belongs the religious controversy in the city of New York from 1840 to 1842. During the absence of bishop Hughes in Europe, the Catholics of the city of New York, in 1839, organized an opposition to the public-school system. On his return, bishop Hughes, in 1840, himself took the lead, and drew up a petition to the common council, praying that seven parochial schools should be designated as "entitled to participate in the common-school fund, upon complying with the requirements of the law." His demand being rejected by the common council, the matter was brought before the legislature; and when he was baffled in his suit there also, he recommended the Catholics to nominate independent candidates in the ensuing elections, thus commencing a movement which developed into considerable strength. The controversy was finally settled by the passage of the act of April 11., 1842, which provided that "no school shall be entitled to, or receive, any portion of the school moneys, in which the religious doctrines or tenets of any particular Christian or other religious sect shall be taught, inculcated, or practiced, or in which any book or books containing compositions favorable or prejudicial to the particular doctrines or tenets of any sect shall be used." The Catholic bishops have since taken the same ground as bishop Hughes; and, in many cases, have adopted very decisive measures against the public schools. In some places, as in Poughkeepsie, N. Y., a compromise has been effected between the common council and the representatives of the Catholic congregations, by means of which the parochial schools have been placed under the supervision of the city superintendent, and thus enabled to participate in the school fund of the city; but on the whole, public opinion appears to pronounce itself in favor of fully carrying out the principle of the undenominational school, without the slightest compromise. When the subject was agitated in Ohio, in the electoral campaign of 1874, the state conventions of both Republicans and Democrats formally declared in favor of the principle of the unsectarian school. The legislature of New York, in April 1876, almost unanimously declared itself in favor of the same principle. President Grant, in his message of Dec. 7, 1875, thought it proper to bring this matter to the attention of Congress, and most earnestly recommended that a constitutional amendment should be submitted to the legislatures of the several states for ratification, making it the duty of each of the states to establish and forever maintain free schools adequate to afford an elementary education to all the children within its limits, irrespective of sex, color, birthplace, or religion, forbidding the teaching, in said schools, of religious, atheistic, or pagan tenets, and prohibiting the granting of any school funds, or school taxes, or any part thereof, either by legislative, municipal, or other authority, for the benefit or in aid, directly or indirectly, of any religious sect or denomination.—See S. S. RANDALL, *History of Common Schools of New York* (N. Y., 1871); BOESE, *History of the School System of the City of New York* (N. Y., 1869); HASSARD, *Life of Archbishop Hughes* (N. Y., 1866); POTTER, *Religion in Public Schools; The proposed substitution of sectarian for public free schools* (New Haven, 1848); RIGG, *National Education in its Social Conditions and Aspects* (London, 1873); MAYO, *The Bible in the Public Schools* (N. Y., 1870); BOURNE, *History of the Public School Society* (N. Y., 1870); WIMMER, *Die Kirche und Schule in Nordamerika* (Leips., 1853); DULON, *Ueber Schule, deutsche Schule, amerikanische Schule und deutsch-amerikanische Schule* (Leips., 1866); ROLFUS, *Wider die Communalschulen* (Mayence, 1863); SICKINGER, *Die Communalschulen* (Mayence, 1871); BECKER, *Der Streit zwischen Materialismus und Christenthum in der Schule* (3d edit., Heidelberg, 1871).

DENTISTRY, Schools of. See MEDICAL SCHOOLS.

DEPARTMENTAL SYSTEM, or Subject System, a method of school organization in which each department of instruction or subject of study is assigned to a particular teacher, instead of requiring each teacher to give instruction to a particular class in all the branches of study pursued. This system is rarely employed in schools for primary instruction; but, in those of a higher grade, is nearly universal. In regard to its advantages and disadvantages, as compared with the class system, many considerations are urged; and the experience of instructors seems to be quite diverse as to its success. The chief argument in its favor is, that it would narrow the range of subjects required to be mastered by a single teacher, and, in this way, improve the character of the instruction imparted. For other considerations in regard to this question, see CLASS.

DEPRAVITY. See MORAL EDUCATION.

DES MOINES, University of, at Des Moines, Iowa, was chartered in 1865. It is under the control of the Baptists, and admits both sexes. It occupies a fine park of five acres, and a four-story brick building on an eminence commanding a fine view of the city and vicinity. The library contains 2,000 volumes. The value of its building, grounds, and apparatus is $50,000; the amount of its productive funds $40,000. In 1875—6, there were 6 instructors and 139 preparatory and 18 collegiate students. The Hon. Frederick Mott is (1876) president.

DETROIT, the principal city of Michigan, situated on the N. W. side of the Detroit river, about 18 miles from Lake Erie. The river is only about a half a mile wide at this point; hence the name of the city (Fr. *Détroit*, narrow). The population of this city, according to the census of 1870, was 79,597, of whom 35,381 were of foreign birth, and of these nearly 13,000 were natives of Germany. The number of colored persons was 2,325. The first permanent settlement on the site of this city was made by the

French in 1701. In 1763, it passed under the government of the English.

Educational History.—The earliest school having any authentic record is that of the Rev. David Bacon, established in 1802. Two years afterward, mention is made of two other schools, but particulars in regard to them have not been preserved. A theological school was opened at this time also; but the fire of 1805 caused it to be discontinued. About this time, the first free school in the city was opened, under Catholic control, near St. Ann's Church, on Larned street. It was a girls' school; and an interesting fact in regard to it is, that three dozen spinning-wheels were kept in the school, on which the pupils were taught to spin. Information in regard to schools from the time of the great fire of 1805 to 1816, is exceedingly meager. A so-called *common school* was opened on the 10th of June, 1816, by a Mr. Danforth of New England; and, in July following, he had 40 pupils. In 1817, the governor and judges passed an act to establish the "Catholepistemiad, or University of Michigania". The energies of the projectors of this formidable institution, however, appear to have been spent in the production of its name, and the passage of the act authorizing its establishment, as no record of its existence can be found, though the result of the act, known as the Catholepistemiad Act, was an increase of the public taxes by 15 per cent, the establishment of a primary school, and the designation of reading, writing, arithmetic, and English grammar as the studies to be pursued in it. Instruction in the classical department of this primary school, was begun in 1818. The same year, a Lancasterian school was established, which in 1823, was committed to the care of John Farmer, who had been specially designated for the work by the trustees of the University of Michigan, a branch of which had been established in Detroit. In 1834, on the site now occupied by the city-hall was erected a building for a female seminary, which was continued till 1842. In 1836, W. A. Bacon opened a select school on the site of the present cathedral, which he conducted for 38 years. In 1838, a public school was opened in the second ward; and, in 1841, the first separate colored school was opened, with 88 pupils. The unsatisfactory operation of the school law, however, led to the appointment, in 1841, of a special committee of inspection, which reported that there were 27 schools in the city, furnishing instruction to 714 pupils, at a cost of $12,600; while there were 1,850 children without instruction. The result of this examination was a recommendation that the legislature be petitioned for an amendment of the city charter permitting the creation, by annual popular vote, of a board of education, and direct taxation for the support of the schools. The opponents of this proposition were numerous; but the measure was sustained by the people at an election ordered for the purpose, and was embodied in a law Feb. 18., 1842. Under this law, with a few amendments, the schools were administered till 1868, when the present law was passed. The first board of education met March 15., 1842, consisting of twelve members, including the mayor and recorder of the city, *ex officio*, the former as president. Two years afterward, the Bible question was introduced, and led to an exciting discussion which lasted a year, ending in a compromise which provided that any school might be opened by reading a portion of the Bible without comment, such reading to be optional with the teacher, and attended with the penalty of removal in case of comment. In 1847, the number of children between the ages of 5 and 17, was 2,239. The first graded school, known as the Old Capitol School, was opened in 1848. In 1852, the question of a sectarian division of the school fund was agitated; but the resulting election, in 1853, expressed the will of a large majority of the people in opposition to such division, and the question has not been revived. The first high school was established in 1858. The *supervision* of the schools was originally confined to the inspectors, and so continued till 1863, when J. M. B. Sill was appointed to the office of superintendent. His successor, in 1865, was Duane Doty, who held the office until 1875, when Mr. Sill was re-appointed, and again appointed in 1876, for 3 years.

School System.—The care of the schools is intrusted to a *board of education*, consisting of two inspectors from each ward, elected by the people biennially, one half going out of office each year. The mayor and recorder are members, *ex officio*, but without vote. The board appoints annually a *superintendent*, whose duties are those usually discharged by such officers. The schools are supported by an annual city tax of not more than 5 mills on every dollar of real and personal property. The school year comprises a period of not less than 3 months. The school age is from 5 to 20 years. Connected with the system is a public library, the building for which was only recently begun. The schools are divided into three classes: primary, grammar, and high schools. The total number of schools, in 1875, was 28, including 2 evening schools. The chief items of *school statistics* for the year are:

Number of children of school age (5—20).....		34,593
" " " enrolled................		13,739
Average enrollment (number belonging).....		9,294
" daily attendance..........................		8,760
Number of teachers, males...............	9	
" " " females..............	212	
Total............		221
Receipts (1875)...........................		$211,690.23
Expenditures (1875).......................		$169,503.69
Total valuation of school property.........		$735,192.00

Besides the public schools, there are several Catholic schools, a German Lutheran school, a German-American seminary, and several public libraries containing about 40,000 volumes. For information in regard to institutions for higher, professional, and special instruction see MICHIGAN. For details in relation to the early educational history of Detroit, see W. D. WILKINS, *Reminiscences and Traditions of the Detroit Schools*, published in the *Twenty-eighth Annual Report of the Board of Education* (Detroit, 1871).

DEVELOPING METHOD is a term introduced into the science and practice of pedagogy through the philosophy of Herbart, and popularized among European teachers through its greatest followers, Beneke and Diesterweg. It means an education of the natural endowments of the individual according to the psychologic laws of human development, and to the exclusion of all purposes foreign to such development. The term, in some respects, is a misnomer, as it implies far more than it expresses. It means a system, realized in, or applicable to, a variety of educational methods, and based on the fundamental principle, that human nature alone, as developed and shown in its best products through a long historical period, should be the guiding star in all educational efforts. Herbart, who was the first among the German philosophers, in opposition to the prevailing speculative philosophy, to apply the method of induction to philosophy, and who based his system on inductive psychology, and treated the latter mathematically, wrote as early as 1806 a work on pedagogy, entitled *Die allgemeine Pædagogik, abgeleitet aus dem Zweck der Erziehung*, in which the new drift of educational ideas inaugurated by Rousseau and Pestalozzi, was reduced to logical principles. He was the first in history to render intelligible the processes in the human soul which lead to memory, comparison, the distinction of impressions and their growth into mental images, notions, judgment and reason, disposition and will; and, in so doing, he reasoned from the established facts of consciousness, and developed a long series of mathematical *formulæ* as evidences of his correctness in interpreting the facts. Beneke, more straightforward than Herbart, gave, in his *Lehrbuch der Psychologie als Naturwissenschaft* (1833), and *Erziehungs- und Unterrichtslehre* (1835), a very lucid and common-sense exposition of this new system of psychology, in its application to pedagogy, which, through Diesterweg's practical treatises and school books, grew almost universally popular among the German teachers. What the *evolution theory* is in modern natural science—an explanation of natural effects from natural causes according to general laws that can be verified by the evidences of the senses and logical reasoning, that is the *developing method* with regard to mental facts and laws, in matters of education. The founders of this system did not go so far as to reach all the legitimate conclusions which may ultimately be drawn from its principle, and which were drawn by the succeeding generation of teachers. The system, as now taught and practiced by men like Dittes and some of Froebel's followers, has undergone a series of gradual improvements, and seems capable of many more; since human nature itself is a subject that receives, through the constant improvement of all the natural sciences, a daily increasing illustration. Nor is there, as yet, a tolerably full agreement among the foremost pedagogical writers upon what may be considered the genuine development of human nature; but the principle itself, that the spontaneous growth of all the faculties of the mind into the greatest possible harmony should be facilitated according to the laws of normal development, not counteracted; guided, but not curbed; and all this in the order which is indicated by nature herself—this principle seems to be so well established, that, henceforth, only its interpretation can be doubtful.

This new psychology sails clear of all the rocks of preconcerted systems and of the maelstrom of party strife; it deals with none but demonstrable facts. Such facts are, that there is no beginning of mental action in the newborn child except by impressions from without; that the latter, called *traces*, cannot grow into distinct images without a grouping of the traces in an order corresponding to the outward objects; that we can verify by actual experiment, both with animals and men, the laws according to which equal traces strengthen each other, similar ones aggregate and form opposites to dissimilar groups of traces; that fugitive impressions have obscure traces, lasting or often repeated impressions, clear traces; that one trace or set of traces is for a time obscured by new ones, and that the consciousness of an image is the effect of either pleasure or pain of the mind in consequence of the impressions, etc., etc. The theory goes on to show that all the higher mental processes are repetitions of the photographic action of the first traces, in a higher order, and follow with mathematical exactness their laws. A normal pedagogy is, therefore, possible, independent of philosophical systems. Disputed questions of physiology and psychology concern only unimportant topics, and, therefore, may be ignored and left to the future development of science; but it is all-important, in pedagogy, to demonstrate clearly all the conditions without which no mind can grow, whatever the nature of mind itself may be considered to be.

It is, therefore, of the first importance to cultivate the action of the senses, the gates to all mental development, in such a way as to render them self-active by their appropriate combination with pleasure and pain; next, to offer to their self-activity a succession of outward impressions which will leave distinct and, by repetition, lasting traces and the most complete images of objects, accompanied by sensations and impulses. The first consciousness being thus awakened, it follows that a comparison and distinction of the representations once produced must lead to both clear notions of their single features and clear consciousness of the mind, without which the origin of *self-consciousness* would be retarded, and its growth stunted. The latter taking its start from the first efforts in speaking, language becomes the chief means of education, and its proper use on the part of the educator, in connection with the objects designated, the way to the subsequent normal development. The gap in this system left between this stage and the first school age was not filled until Froebel, starting from a somewhat different stand-point, invented his kindergarten plays.

Great stress is, in this system, laid on the gradual progress of education, which, after all, is little more than instruction, a somewhat one-sided culture of the intellect, the imagination, and the memory. The teacher is to proceed from the *simple* to the *compound*, from the *concrete* to the *abstract*, from *perception* to *reflection* in the pupil, from *examples* to *rules*, from *facts* to *laws*. He is to be more a guide than a teacher; he is not to tell his pupils any thing which they can be led to find out themselves. He is to present them just mental food enough, and no more, at a time, than can be fully digested; and that food ought to be adapted to the age and degree of development. Every kind of mental food ought to be so fully digested as to contribute to the increase of every mental faculty. The pupil is to be rendered his own teacher; his self-activity is to be fostered first, last, and at all times.

The cultivation of the memory at the expense of observation and reflection, which, in all *routine* teaching, plays so prominent a part, is made unnecessary by stimulating the mental appetite and digestive power of the pupil; whatever is fully understood will forever remain mental property. All mechanical drill, and all moral preaching, is more hurtful than useful, because skill in the learner is to grow out of repeated self-appropriation connected with that pleasure which accompanies the satisfaction of every mental appetite; and because an appropriate mental food is conducive to moral power. Development means self development, guided by well-developed educators.

It is evident that this new system exacts a far higher standard of abilities and attainments in the educator than ever before had been deemed necessary. This necessity led to a considerable improvement in the course of training of pupil-teachers in the German and other normal schools. "The teacher is the school," was the maxim inculcated there. If he be the proper person destined by natural gifts and prepared for his calling by a careful study of mental phenomena and a long theoretic and practical training, he will make up for the short-comings of text-books, apparatus, and previous education. If he be full of enthusiasm for his sacred task of forming minds, and patient in all his laborious methods, he will mould his pupils' minds and morals by means of their self-development. The rational sobriety of this system was greatly aided by the marvelous spirit of self-devotion and educational enthusiasm which had been engendered in the teaching fraternity by Pestalozzi; and it may be called a fact, that hardly ever, or anywhere, was there done such intelligent and faithful work in thousands of schools, and for so scanty a remuneration, as in the *developing-method* schools up to the period of the "School Regulations" (*Schulregulative*).

Among the reforms in special methods that followed in the wake of this system, must first be mentioned the introduction of phonic or phonetic reading. Spelling was altogether superseded, and orthographical writing exercises substituted, based on a few rules which the pupils had to deduce for themselves from a comparison of examples. Gräser and Vogel improved this method, which is liable to be too mechanically applied, by combining it with the *writing-reading* and the *synthetico-analytic* methods. The former begins with analyzing the single sounds of which the words consist and teaching the written signs for them, and continues with writing these and other words; printed words, or rather sentences, are introduced when the pupils can read all written letters, and thereafter all that has been read must be faultlessly copied. The latter begins with sentences that must be analyzed into their component words, and the words into their component sounds; the corresponding signs (letters) are then given, either in written, or in printed form (or in both—Douai's method exemplified in his *Rational Readers*) and then synthesis-reading begins, accompanied with constant copying exercises, which must be faithfully controlled. Another improvement has been effected by connecting penmanship exercises with the first writing exercises by means of time-beating (*Taktschreiben*). The object is to prevent the formation of careless habits instead of weeding them out when formed, which is still further aimed at by reading *in concert*, alternately with individual reading. In arithmetic, the beginning was made with mental exercises in the analytic method; but there is a great variety in the methods of connecting analysis with ciphering, and in the extent to which it is carried. Great importance, however, is universally attributed to a full understanding of the value of numbers, both single and in their decimal orders. Some methods, progressing through concentric circles of 1—10, 10—100, 100—1000, etc., involve, within each circle, all the four ground rules; some, only addition and subtraction together, and, later, multiplication and division together; some, only one at a time, with larger concentric circles, etc. Some introduce the elements of fractions at a very early epoch, dividing them also into concentric circles; some introduce decimal fractions even before common fractions. Object lessons in special branches according to the older (Pestalozzian) process were to some extent crowded out when all teaching became *object teaching*; yet special object lessons in zoölogy and botany, geometry and geography, remained favorite branches in most plans of teaching. The method of teaching the mother-tongue is also very variable; but, through all that variety, a tendency is conspicuous to make the most of the pupil's self-activity by guiding him to form sentences orally and in writing, whether for orthographical, grammatical, rhetorical, or elocutionary purposes. Grammatical analysis with parsing fills far less time than synthesis. It is a strange fact that the study of Latin and Greek has, only very recently and to a very limited extent, been subjected to the same method; but the modern languages were treated in the analytico-synthetic way (this way ought not to be confounded with the Ahn or Ollendorf method, from which it is distinguished by scientific, pedagogic spirit, and a far greater efficiency). This method may be called *Mager's* method. There is an endless variety of special methods in all branches of primary and secondary instruction, which it is not necessary here to explain.

It is useless to discuss the merits and shortcomings of special methods, since any one of them that has passed the ordeal of a practical application in the school room may be called good, because adapted to the genius both of the teacher and his particular class of pupils. No single practical method can claim universal applicability; every one will have to be modified to be adapted, not only to every other teacher's peculiar development, but also to that of every other class or pupil. He is a bad follower of the *developing method* who treats, year in and year out, every new class of pupils according to a stereotyped manner for each branch of instruction, instead of accommodating himself to the wants of the class. The *developing method* means nothing more nor less than that there shall be *method* in all the teacher's doings,— a well-concerted plan, calculated to develop every gift of each pupil by educating him to self-activity in every branch of the curriculum, and to produce a certain degree of uniform general development without neglecting either the forward, or the backward portion of his class. And high as this standard of abilities in the true education may be, experience proves that it will be almost universally realized, if the position of the teacher be sufficiently remunerative, independent, and honored, to attract to the profession all persons born to be teachers. This realization has, moreover, been considerably facilitated by the preparation for the primary classes, which may be obtained from Froebel's kindergarten.

DEVOTIONAL EXERCISES. See RELIGIOUS EDUCATION.

DIARY, School, a daily record of the lessons, recitations, deportment, etc.,of pupils, kept in a small book which is taken home each day, or each week, to be exhibited to the parents, whose inspection is attested by their signature previous to the diary's being returned to the teacher. Thus, a constant correspondence is kept up between parent and teacher, the former being continuously informed of the child's progress, merit or demerit, and behavior; and thus enabled intelligently to co-operate in his school education. Instead of the diary, some teachers prefer the monthly report. (See SCHOOL RECORDS.)

DICKINSON COLLEGE, at Carlisle, Pa., was founded in 1783. Since 1833, it has been under the control of the Methodist Episcopal Church, prior to which date it was under Presbyterian control. Prominent among its founders were John Dickinson, first governor of Pennsylvania, and Dr. Benjamin Rush of Philadelphia. Before the late war, its patronage was largely from the South: since that event, it has depended for patronage chiefly on the Middle States. The value of grounds, buildings, and apparatus is $150,000; the amount of productive funds, $175,000. The cost of tuition is merely nominal, being by scholarships, the whole expense of which is $25 for the four years' course. The board of trustees have recently established the following departments of study, and propose to carry out the university principle of elective courses, as far as the means at their command will permit: (1) moral science; (2) ancient languages and literature; (3) pure mathematics; (4) philosophy and English literature, including history and Constitutional law; (5) physics and mixed mathematics, and the application of calculus to natural philosophy, astronomy, and mechanics; (6) chemistry, and its application to agriculture and the arts; (7) physical geography, natural history, mineralogy and geology; (8) modern languages; (9) civil and mining engineering, and metallurgy. The scheme embraces much more than can be accomplished in four years. Those students who wish to obtain the collegiate degrees are required to devote the earlier part of their course, as heretofore, mainly to the elements of classical learning and the pure mathematics; but, for the latter part, certain studies are made optional, and those who go through any of the prescribed special courses, obtain the degree of Bachelor of Arts equally with those who complete the classical course. These special courses are the Scientific Course, in which such students as desire are allowed to substitute practical chemistry for the Latin and Greek of the junior and senior years, and the Biblical Course, in which students preparing for the Christian ministry are allowed to take Hebrew and New Testament Greek in their junior and senior years, in place of equivalent studies, chiefly mathematical. A partial course, of about two years, and embracing such studies from the regular curriculum as bear directly upon any special vocation, can be pursued by students not intending to graduate. The college has a museum containing specimens in mineralogy, geology, and natural history, and a cabinet of ancient coins; valuable philosophical and chemical apparatus; and an astronomical observatory, provided with an achromatic telescope. The college library contains about 8,000 volumes; those of the Belles-Lettres Society and the Union Philosophical Society about 10,000 each. In 1874—5, there were 7 professors and 88 students. There is a law department under the charge of the professor of law. The presidents of the college have been as follows: Charles Nisbet, D. D., 1784—1804; Robert Davidson, D. D. (*pro tem.*), 1804—9; Jeremiah Atwater, D. D., 1809—15; John McKnight, D. D. (*pro tem.*), 1815—16; John Mitchell Mason, D. D., 1821—4; William Neill, D. D., 1824—9; Samuel B. How, D. D., 1830—2; John Price Durbin, D. D., 1833—45; Robert Emory, D. D., 1845—8; Jesse Truesdale Peck, D. D., 1848—52; Charles Collins, D. D., 1852—60; Herman Merrills Johnson, D. D., 1860—7; Robert L. Dashiell, D. D., 1868—72; and James A. McCauley, D. D., the present incumbent, appointed in 1872.

DICTATION, a school exercise in which the teacher reads or speaks (dictates) to the pupils what is to be written by the latter for practice in writing, spelling, etc. Such exercises are very useful, not only to give accuracy and expertness in writing words and sentences, but to train the ear to the ready apprehension of spoken language. In this respect, it supplements *copying*, which exclusively disciplines the eye.

DICTIONARY, a book containing a list of all the words of a language, alphabetically arranged, with information in regard to their derivation, meaning, and use. The Greek word *lexicon* is frequently used to designate a dictionary of the words of a foreign language; the term *glossary*, to denote a collection of technical, obsolete, or other words requiring special definition or explanation. A dictionary of facts is entitled an *encyclopædia*, if it embraces the consideration of the full circle of sciences, and a *cyclopædia*, if it treats of a special department of knowledge. These two terms are not, however, always used with this discrimination, but are often applied indifferently to any complete collection of facts, general or special, arranged under alphabetical headings. To such collections the terms *thesaurus* and *gazetteer* are also applied, the latter exclusively to a geographical dictionary.

The first attempt at a complete collection of the words of the English language was the *Universal Etymological English Dictionary* (London, 1726), by Nathan Bailey, which subsequently formed, in part, the basis upon which Dr. Johnson compiled his great work. Johnson's *Dictionary* appeared in 1755, after seven years of constant labor, and justly entitled its author to be considered the founder of English lexicography. It was greatly enlarged by Todd in the editions of 1814 and 1827. The most important dictionaries published in England since the time of Johnson are Walker's (1791), Enfield's (1807), Booth's (1835), Smart's (1836), and Richardson's (1837). The catalogue of works of this kind is, however, very extensive; but the most important is the elaborate work of Dr. Richardson, entitled a *New Dictionary of the English Language* (2 vols., 4to, London, 1835—7). Special attention is given, in this work, to the etymology of words and their illustration by copious citations from standard writers; and the arrangement is in the alphabetical order of the primitives, beneath each of which its derivatives are grouped. Of this work, Dean Trench remarks, "It is the only English dictionary in which etymology assumes the dignity of a science."

The first dictionary of any importance published in the United States was the first edition of Webster's *American Dictionary of the English Language* (2 vols., 4to, N. Y., 1828). Of this work, revised and enlarged editions were published in 1840 and 1843, during the life of the author; but in 1848, a new edition, revised and enlarged by Prof. Goodrich, was issued at Springfield, Mass., and in 1864, a still larger edition was published in Springfield, with revised etymologies and much additional information of great value. This work is a large quarto, of 1840 pages, and contains about 114,000 words. The elaborate illustrated dictionary of Dr. Worcester, published in 1860, is also a work of nearly the same size as Webster's, and contains about 104,000 words. This work is more conservative in its orthography and pronunciation than that of Dr. Webster, and is generally followed in the New England states. The authority of *Webster's Dictionary* is, however, undisputed in most parts of the United States.

A dictionary is strictly a work of reference, and is to be employed exclusively as such; hence, its use as a school book is limited. It was formerly, in some schools, the custom to require pupils to learn by rote the spelling and definition of words from abridged dictionaries and expositors, the alphabetical arrangement of words being followed in the assignment of lessons; but this absurd practice is now, probably, entirely obsolete. After a certain degree of advancement in learning to read, it is, without doubt, of importance that the pupils should be supplied with simple dictionaries, and encouraged to refer to them for information in regard to the meaning of the difficult words which they meet with in their reading books. This will serve to inculcate the habit of frequently consulting the dictionary in their subsequent studies, and will, in this way, lead to a more accurate knowledge of their language, more especially its orthoepy, in which most persons, even those of considerable culture otherwise, are apt to be quite faulty. In pursuing this method, the following course of procedure will be found beneficial: (1) The teacher assigns a certain portion of reading matter, or a certain number of selected words, which the pupil is to study critically by the use of the dictionary, as far as may be necessary; (2) The pupil learns, from the dictionary, the meaning or definition of those which he does not understand, and next studies how to illustrate their application by using them in sentences, or by citations from standard authors; (3) In an advanced stage, the student gives more critical attention to the precise shades of meaning of the words usually deemed to be synonymous, and learns how to make a proper discrimination in the use of such words. For this purpose, such works as Roget's *Thesaurus* and Crabb's *Synonyms* will be found important auxiliaries to the unabridged dictionary of either Webster to Worcester.

To the teacher, no acquisition is more important than a critical knowledge of the orthography, pronunciation, meaning, and proper use of words in his own language; and, hence, a good dictionary should always be at hand for the determination of those doubtful points which, with even the best scholar and the most experienced teacher, will sometimes arise. A dictionary is, therefore, a part of the school apparatus, which cannot be dispensed with.

In the study of a foreign language, the dictionary is needed at a much earlier stage than in the study of the vernacular; although modern educators strongly advocate that the process of acquiring a foreign language should be made, as much as possible, to conform to the manner in which the child learns to speak his native tongue. The number of words of the foreign language which can be learned in this way must, however, be always quite limited, and hence the constant need of consulting the dictionary. It is a noteworthy fact in this connection, that the science of lexicography has been developed by the need of dictionaries to facilitate the study of foreign languages, not the native tongue. Though the Greeks and Romans, and even some of the oriental nations before them, had vocabularies of the words of their languages, arranged more or less in alphabetical order, the origin of complete dictionaries is no earlier than the time when the study of the classics was revived in Italy. The most famous, though not the first among these was *Calepino* (Latin Lexicon, Reggio, 1502), from whose name is derived the French word *calepin* (a commonplace-book). But the path in which modern lexicographers have gained so much distinction was first opened in 1532 by Robert Stephens (Fr. *Étienne* or *Estienne*) by the publication of the *Thesaurus Linguæ Latinæ* and Henry Stephens's *Thesaurus Linguæ Græcæ*, published in 1572, in 5 volumes, but abridged by Scapula, who issued in 1579 *Lexicon Græco-Latinum novum.* (See STEPHENS.) These works were the first notable attempts to develop the various meanings of every word, and to make scientific arrangement no less an essential feature than completeness of vocabulary. Among the most prominent of the succeeding lexicographers, are Forcellini, Scheller, Freund, and Georges for the Latin, and Passow for the Greek. Forcellini was chiefly distinguished for illustrating the meaning of every word by examples from classical authors; and the Germans just named developed this feature to a high degree of perfection. The first Latin-English dictionary was edited by Sir Thomas Elyot (London, 1538); the most famous was that of Ainsworth (q. v.). The work of Forcellini was the basis of the Latin-English dictionary of Leverett (Boston, 1836), and that of Freund, of the Latin-English dictionary of E. A. Andrews (New York, 1856). The Greek lexicon of Passow is the basis of the Greek-English lexicon of Liddell & Scott (Oxford, 1845) and its American revision by Drisler (New York, 1848). It is a noteworthy fact in the history of English and American education, that until the present century the Greek language was studied through the medium of the Latin, and there were no Greek English, but only Greek-Latin lexicons. The Germans, for a considerable time previously, had published lexicons in their own language, and the French had followed their example. The first Greek-English lexicon announced (in 1814) was that of John Pickering, which was based on the Greek-Latin dictionary of Schrevelius. But before it was published (Boston, 1826), a similar work, the Greek and English Lexicon of John Jones (London, 1823), appeared in England. The Lexicon of Donnegan (London, 1827) was professedly, in substance, a translation of Passow's work; and Dunbar's Greek and English Lexicon (Edinburgh, 1843) was chiefly a reprint of the second edition (1829) of Pickering's work. Great improvements in the adaptation of the classical dictionary to school purposes were introduced by Ingerslev's Latin-German Lexicon (1st edit., 1852; 4th, 1876). Before him, it had been the aim of lexicographers in general to attain the greatest possible completeness of words and their different meanings; and the works of smaller compass were condensed abridgements. Ingerslev conceived the idea of a school dictionary in the strictest sense of the term. It was to be limited to those writers whose works are usually read in classical schools, and was designed to explain sufficiently every difficult passage occurring in any of this class of authors. By referring in succession to all the synonyms of a word, and only defining the distinctive meaning of the word itself, the synonymic element of the language, as far as it is of value for the pupil of a Latin school, is explained in the smallest possible compass. The poetic, later, and ante-classic use or meaning of every word is pointed out by appropriate abbreviations; the remainder is classic. This plan has met with universal approval among German scholars; and a number of other works have since been published, the most important of which are those by Georges (1st edit., 1864; 3d edit., 1874), and Heinichen (Leips., 1864), for the Latin; and by Benseler (4th edit., 1872), and Schenkl (3d edit., 1867) for the Greek. The lexicon of Ingerslev is the basis of the Latin-English lexicon of Crooks and Schem (Philadelphia, 1857). A large number of special dictionaries to classic authors, especially those read by beginners, have been prepared, but many educators disapprove of the use of books of this class. On the other hand, the compilation of an elementary dictionary specially suited for the study of the Latin writers read by beginners has been recommended, and a good work of the kind has been edited by Georges (*Lateinisch-deutsches Schulwörterbuch*, Leipsic, 1876).

The dictionaries of modern languages are either unilingual, intended for the natives of a country, or bilingual, intended for the study of a language other than the vernacular. The former more or less resemble in their history and scope the English works referred to above. Many works of the former class owe their origin to learned societies. Among them is the celebrated Italian dictionary *della Crusca* (*Vocabulario degli accademici della Crusca*, first published in 1612). The fame of this work is, however, greater than its real merit, for it is, in fact, only a dictionary of the Tuscan dialect, and while regarding the 14th century as the Augustan age of Italian literature, it slighted the distinguished writers of the 16th century. It was subsequently enlarged and improved (Florence, 1729—1738), and in this augmented form is still the standard authority for the Italian language.—Spain also owes its largest dictionary to the Spanish Academy (6 vols., Madrid, 1726—1739), which became the absolute standard of Spanish orthography; it was, in the present century, revised and greatly enlarged by Salvá who added more than 20,000 words (1st edit., 1846). —France is indebted for the first noteworthy dictionary of its language to Robert Stephens, who published a French-Latin dictionary in 1539. The dictionary of the French Academy was first published in 1694, and soon became the standard lexical authority of the French. It has been from time to time revised; and a seventh edition, under the editorship of Patin, was to be completed in 1876. The dictionary of the Academy was followed by a considerable number of other works, the most important of which, that of Littré (3 vols., Paris, 1863—1873), is regarded as being, in many respects, even superior to the dictionary of the Academy, and entitled to a place among the very best products of lexical science. — The history of German lexicography is traced to the 7th century. The first work of lasting value was the German-Latin dictionary of Frisch (Berlin, 1741). Adelung's dictionary (Leips., 1774—1781) was, for a time, a classical work; but the standard work of German literature is the dictionary of the brothers Jacob and Wilhelm Grimm, begun in 1852, on a plan more extensive than any other dictionary of any modern language. It is to include every word used in German works from Luther to Goethe. It was continued after the death of the authors by Moritz Heyne, Rudolf Hildebrand, and Karl Weigand: and it is expected that the whole will be ready about 1890. Of other German dictionaries those of Sanders are highly valued and have found a large circulation (*Wörterbuch der deutschen Sprache*, 2 vols., Leips., 1859—1867; and *Handwörterbuch der deutschen Sprache*, Leips., 1869).—The standard dictionary of the Russian language has been prepared by the Russian Academy (4 vols., St. Petersburg, 1847). Most of the smaller nationalities of Europe have likewise their national dictionaries, which, though inferior to the works of Grimm and Littré, are, in many cases, store-houses of profound learning and indispensable for the philosophical study of the several languages. In the schools of all the countries referred to, the use of this class of dictionaries in the study of the native language is less frequent than in England. The bilingual dictionaries belong to the same class as the Greek and Latin lexicons, but there are some marked points of difference. The Greek or the Latin lexicon is chiefly, or almost exclusively, used for acquiring the ability to read the classic authors; a speaking and writing knowledge of either of these languages has been the object of study in only few cases, and, at present, even more rarely than formerly; therefore, the great majority of students use only the classic-modern dictionary, and but very few the modern-classic dictionary; indeed, many distinguished educators regard the latter as entirely superfluous. In the study of modern languages, on the contrary, the object of study is to speak and write as well as to read; and, hence, the native-foreign part of the dictionary is as much needed as the foreign-native, and almost wholly supersedes the latter as soon as a good knowledge of reading has been acquired. As modern languages are living and growing, while the classic languages are dead and fixed, the dictionaries of the former require more frequent revisions and larger additions than the classic lexicons, — a distinction which is of practical importance. The classic languages are studied for educational and scientific purposes only; the modern languages, in most cases, because a knowledge of them is believed to be of practical advantage. As a general rule, a greater degree of scholarship may, therefore, be looked for in the classic lexicon, and a more practical arrangement in the modern dictionary. Attempts to compile dictionaries containing the words of more than two languages, have not been wanting, but have met with but little favor. The alphabetical arrangement is the universal rule in all dictionaries; all attempts to substitute any other having always failed. In classical dictionaries, however, for beginners the partial combination of the etymological with the alphabetical arrangement is regarded by some educators as useful and convenient. The dictionaries of oriental languages are, to a higher degree than either classical or modern dictionaries, written for the special use of scholars.

The great progress of linguistics, and, especially, of comparative linguistics, has made it possible for modern lexicographers to develop the etymological department of the dictionary in such a manner as to render works of an earlier date almost useless. There is, however, a great want of agreement as to the extent to which it is desirable to introduce this feature into school dictionaries. In the classical dictionary, it is the general rule, to give at least as much of etymological explanation as is of immediate practical value to the pupil. Of the dictionaries of modern languages, some give etymological explanations, and some wholly omit them. As a very valuable fruit of the science of comparative linguistics may be mentioned the etymological dictionaries of whole families of languages. One of the best representatives of this class of works is the *Etymologisches Wörterbuch der romanischen Sprachen* by Diez.

As in the study of languages, whether classical or modern, as well as in the native language, the dictionary is an important school book, the teacher should not omit to familiarize his pupils with the proper way of using it; and it is therefore, desirable, as a matter of convenience, that the pupils of a school should be all supplied with the same dictionary. For information regarding the literature of dictionaries, see Vater, *Literatur der Grammatiken, Lexica und Wörtersammlungen aller Sprachen der Erde* (2d edit., revised by Jülg, Berlin, 1847).

DIDACTICS, the theory of instruction, as distinguished from that of education in its narrower sense, implying simply moral education.

It is commonly treated under two heads: *general didactics*, which exhibits the philosophical principles of teaching, and the conditions of its success; and *special didactics*, or *methodics*, which applies the general truths to the several branches of instruction, the different ages to be instructed, and the various individual characters and their treatment. The distinction between didactics and pedagogy in the narrower sense is made only for the sake of separate scientific treatment, as it is universally conceded that all instruction can be rendered a means of moral education, and that no instruction deserves the name, or can be truly successful, without a corresponding development of moral power. In any branch of instruction, the very first beginning presupposes *attention* on the part of the pupil, while the progress made will depend on his *self-activity*, and his ultimate mastership on his full appropriation of all the *moral power* inherent in the branch of art or science concerned. On the part of the teacher, moral power, engendered by such mastership, must be presupposed, if he is to impart to his pupil attention, self-activity, and love for the subject. In regard to the age of the pupil, instruction and moral education bear to each other a changing proportion. During the first age,—from earliest infancy up to the eighth or tenth year, the so-called *formal purpose* of education prevails in importance; the several functions of the youthful mind must be made self-active, and the *material purpose* of didactics,—the acquisition of knowledge or positive learning, must be made a mere means to the former, so that no more of each concentric circle of facts be given to appropriate than can be digested for the benefit of each function. The second age, which extends to the beginning of sexual maturity, is the one during which instruction and education should be, as it were, in equipoise; while, in the period after sexual maturity, the material purpose, that of the acquisition of knowledge and skill, may preponderate. In regard to the branches of instruction, general didactics shows which of these are adapted to the several stages of the mental and moral development of the three ages, and which concentric circle of facts and truths of every science and art may be introduced at the time when it can serve as wholesome mental and moral food. A most important distinction is made between the pedagogical and the scientific treatment of every subject of instruction, the latter being of necessity *systematic* and *synthetic*, while the former should be *methodic* and *analytic* first, *synthetic* last; that is to say, should introduce every object of learning at such a time, and in such a manner, that it may be mentally and morally appropriated.

Special didactics, commonly designated as *methodics*, treats of the pedagogical means proper in each branch of instruction, at each age and stage of development. An explanation of the more important methods of didactics will be found under the titles of the various branches. In general, however, we may state that all prominent educators concur in holding that the teacher is every-where the best method, as he is in fact the school itself, if he be a true teacher. It would, however, be a dangerous error to suppose, on that account, that every teacher should be left free to invent his own methods, or could be expected to be successful without an acquaintance with the best methods in use. This error will be avoided by those who, on the one hand, are so deeply imbued with the great responsibility of their calling, as to feel that the wisdom of the preceding generations of great teachers cannot be neglected, and, therefore, that the methods devised and practiced by them should be made a subject of faithful and conscientious study; but who, on the other hand, realize the principle that the most approved methods cannot benefit a teacher who has not mentally so appropriated them as to reproduce them according to his own individuality, and to be able to adapt them to the peculiar wants of his pupils, as well as to all other circumstances in which he is placed. All teaching should be methodical in every aspect; it should be based on the thorough appropriation of a proper system of pedagogy; and it should be a natural outgrowth of the teacher's personality, if it is to perform its proper office in the work of real education.

DIESTERWEG, Friedrich Adolf Wilhelm, one of the most distinguished educational writers of Germany, in the present century, was born at Siegen, Oct. 29., 1790, and died at Berlin, July 7., 1866. After studying, at the universities of Herborn and Tübingen, theology, philosophy, mathematics, and natural science, he became, in 1810, a private tutor at Mannheim; in 1811, teacher at the secondary school of Worms, which at that time was French; in 1813, teacher at the model school of Frankfort; in 1818, second rector of the Latin school of Elberfeld; and, in 1820, first teacher and acting president of the seminary at Meurs. While in the latter position, he gained a reputation both as a teacher and as an educational writer, which spread throughout Germany. He not only compiled a large number of school books, many of which are still in extensive use, but also took an active part in all the educational controversies of the day. In 1827, he founded the *Rheinische Blätter für Unterricht und Erziehung*, a quarterly journal devoted to instruction and education, with special regard to elementary instruction. In 1832, he accepted a call as director of the teachers' seminary at Berlin, where, as an advocate of sweeping and radical reforms, he had to contend with many difficulties. In 1836, the Prussian government sent Diesterweg to Denmark, to observe and report on the monitorial system which prevailed in the schools of that country. Diesterweg's report, published under the title of *Bemerkungen und Ansichten auf einer pädagogischen Reise nach den dänischen Staaten im Sommer* 1836 (Berlin, 1836), was adverse to the Danish system, and called forth replies from Zerrenner and others. In 1846, Diesterweg took an influential part in the celebration, by the German teachers, of the centennial birthday of Pestalozzi, and in founding an institution for orphans, as an appropriate monument to the great regenerator of modern popular education.

Diesterweg was very obnoxious to the political conservatives and the orthodox Protestants, but maintained himself, amidst constant conflicts, until 1847, when the minister of educational and ecclesiastical affairs, Eichhorn, suspended him from office. Three years later, in 1850, he was definitely removed, but his entire salary was left to him. Henceforth, he devoted his time partly to literary labors, and partly to the advocacy of his views in the town council of Berlin and the Prussian parliament, to both of which bodies the city of Berlin elected him a member. In the Prussian parliament, Diesterweg was the leader of the opposition to the principles which the Prussian government, at that time, endeavored to carry into effect, in the state school system, and especially to the famous "three school regulations" (*Schulregulative*), which aimed at substituting for the principles of Pestalozzi the most intimate connection between church and school. Diesterweg was generally regarded by the teachers of Protestant Germany as the leader of the party which demanded an entire disconnection of the school from the church; and, by his own party, he was looked upon with sentiments of profound love and admiration. When he celebrated, Oct. 29., 1865, his seventy-fifth birthday, a number of his pupils from all parts of Germany presented him with a silver laurel wreath.

The views of Diesterweg concerning the relation between religion and education necessarily provoked the determined opposition of those who did not share them, but even his opponents concede the excellence of many of his school books. Among these books, may be mentioned the following: *Lehrbuch der mathematischen Geographie und populären Himmelskunde* (8th edit., Berlin, 1874); *Leitfaden für den Unterricht in der Formen- und Grössenlehre* (3d edit., Elberfeld, 1836); *Praktischer Lehrgang für den Unterricht in der deutschen Sprache* (Part 1., 6th edit., Gütersloh, 1836; Part 2. and 3., 5th edit., 1836); *Praktisches Rechenbuch für Elementar- und höhere Bürgerschulen*, in connection with Heuser (part 1., 21st edit., Gütersloh, 1865; part 2., 11th edit., 1861; part 3., 4th edit., 1860); *Methodisches Handbuch für den Gesammtunterricht im Rechnen*, also in connection with Heuser (2 vols., 6th edit., Gütersloh, 1864); and the *Elementar-Geometrie* (4th edit., Frankfort, 1874). As an organ for the dissemination of his views, he established, in 1851, in addition to the *Rheinische Blätter*, his *Pädagogisches Jahrbuch*, of which one annual volume appeared regularly until his death. This theory of instruction and education is fully developed in the *Wegweiser zur Bildung für deutsche Lehrer*, which he published in union with Bormann, Lüben, Mager, and other teachers (5th edit., Essen, 1875). He treats in this work of the principles according to which man should be instructed and educated in general, and of the method which should be observed in teaching the different branches of instruction in particular. The literature on every subject is given with critical remarks. As the aim of all education he regards the principle of "self-activity in the service of the true, the beautiful, and the good." Christianity he regarded as the most perfect system of religion, and the divisions of Christianity as resulting from the different degrees of culture in the individuals who embraced it. His opposition to the doctrines of the Church gradually assumed a tone of great bitterness, provoked to a great extent by his personal conflicts with the Prussian government. He was outspoken in advocating that the denominational character of the public school should be abolished, and that unsectarian "communal" or "national schools" should be established in their place. He did not wish, however, to have religious instruction excluded from the schools, but favored an instruction in the general tenets of religion by the teacher.

Although Diesterweg devoted his attention chiefly to the elementary schools, he also wrote on the reform of the secondary schools, and still more on that of the universities. In his essay *Ueber das Verderben auf deutschen Universitäten*, which forms a part of the work *Beiträge zur Lebensfrage der Civilisation* (Essen, 1836), he severely censured the course of instruction pursued at the German universities, and contended that the method of teaching should be made to conform to the wants of the age, and that the studies, as well as the conduct of the students, should no longer remain without superintendence by the proper authorities. The universities were defended against these charges by Prof. Leo, of Halle, in the work *Herr Dr. Diesterweg und die deutschen Universitäten* (Leipsic, 1866).

Soon after the death of Diesterweg, a number of his friends, pupils, and admirers determined to establish, in commemoration of his merits, a *Diesterweg-Stiftung*, the object of which was to enable a number of competent teachers to devote themselves wholly to educational labors in the spirit of Diesterweg. The *Stiftung* embraces within the scope of these labors educational lectures, the publication of educational works, inclusive of a continuation of Diesterweg's *Jahrbuch;* and the establishment of a national German model school on the basis of Diesterweg's principles.—See Knecht, *Adolf Diesterweg, sein Leben und Streben* (in *Magazin für Pädagogik*, 1869); Langenberg, *A. Diesterweg, sein Leben und seine Schriften* (Frankfort, 1869; this biography contains a complete list of all the writings of Diesterweg). A "Memoir" of Diesterweg has appeared in Barnard's *Journal of Education*, in which are also published translations of several essays of Diesterweg; as, *Catechism of Methods of Teaching*, *School Discipline and Plans of Instruction*, *Intuitional and Speaking Exercises*. A selection from the works of Diesterweg, with a biographical introduction, has been published by Langenberg, under the title, *A. Diesterweg, Lichtstrahlen aus seinen Schriften* (Leipsic, 1875).

DIFFIDENCE, or an instinctive distrust of one's own ability, arising from peculiarities of temperament and mental constitution, very often characterizes both children and adults; and, when it is excessive, presents a very serious hinderance, in respect to both moral and intellectual education, to the teacher who fails to study sufficiently the individual characters of his pupils, or who is ignorant of the proper methods of addressing their peculiar traits, so as to guide or correct their natural tendencies. Every teacher of experience is aware that some children are bold, forward, confident, or conceited; while others are timorous, shy, bashful, and diffident. The former seem to be better subjects of instruction, and make a more gratifying return for the teacher's efforts, because they are ready to make an immediate use or display of their acquirements; while the others, however much they may have learned, fail to meet the ordinary exigencies of school recitations, examinations, or public exhibitions, on account of their excessive self-restraint, and their natural shrinking from any trial of their ability. They fail because they *think* they will fail, or because they are so sensitive to censure or unfavorable criticism, that they are paralyzed by the apprehension of it. Of this peculiar trait the poet Cowper was a singular example; and all are familiar with the sufferings which he underwent in anticipation of the performance of his public duties as clerk to the house of lords, almost unseating his reason, and compelling him at last to resign the honorable and lucrative position which his friends had obtained for him.

This peculiar trait of character, according to Spurzheim, is the "effect of circumspection, combined with secretiveness and intellect;" to which may be added deficient self-esteem, and a sensitive, impressible temperament. When the feeling of secretiveness, or shyness is predominant, diffidence assumes the form of bashfulness; when caution is the leading trait, it is the sense of danger that restrains; and when self-esteem is deficient, it is humility, modesty, or an extravagant impression of inability. All these phases should be subjected by the teacher to a close and discriminating scrutiny, and proper means should be adopted to give tone and balance to the character, as one of the most important results of a judicious education. Some of the best minds have been characterized by diffidence; but generally they possessed other qualities which counteracted its effects, or compensated for the infirmity. Washington was noted for his modesty, arising, without doubt, from natural diffidence mixed and tempered with firmness and an unusually strong sense of moral rectitude; but he was also distinguished for his fearlessness in the presence of extreme peril, showing that diffidence is by no means inconsistent with intrepidity.

In dealing with children who possess this trait, the teacher should use every means of encouragement, should be careful not to place the pupil in positions in which there is a probability of failure and disgrace, and should aim to control his will by an appeal to his affections, his love of approbation, and his sense of right, rather than to his fear or his sense of shame. His self-esteem being deficient, everything should be done to cultivate it, and he should, therefore, be led rather by praise than driven by censure; but, above every thing else, in a child who is wanting in self-esteem, should the seeds of moral principle be planted; so that if he is not governed by pride or a sense of personal honor, he may listen to the dictates of conscience. The principle underlying this treatment is, to counteract the bad effects of a deficiency in certain mental qualities by addressing those which are strong or excessive. Hecker, in *The Scientific Basis of Education*, in this connection remarks, "If the child with whom the teacher is dealing has these restraining faculties large, the teacher, on that account, has more difficulty in guiding him, but has the conditions of greater success if he can succeed in doing so. On this disposition depends the character of self-sustained and self-made men."

DILIGENCE, the virtue of constancy in labor, is an important, though not the sole, means of success in any branch of human calling. It is a function of the will power, as distinguished from intellect and sensation, and is of spontaneous growth, wherever the occupation is akin to the inclination and productive of pleasure. It can, therefore, artificially be engendered only by connecting the occupation with pleasurable emotions that are not foreign to the subject. Where the latter are missing, only dire necessity can keep diligence alive,—either some necessity from natural, or from positive law. But then diligence has ceased to be a virtue, though it may continue as a habit, mechanically as it were. In education, diligence is more powerful than natural adaptation, as all the experience derived from the history of great men shows. It is the office of pedagogy to promote diligence in the pupils by spontaneous growth, as is done in the kindergarten system of education. Where such spontaneous growth has not been effected by early influences, an artificial growth must be cultivated; but the pleasurable emotions to be connected with the occupation, should be prompted as little as possible by means foreign to the subject, such as, for instance, outward punishments, rewards, purely mechanical discipline, or the stimulus of ambition. Whatever the occupation or study in which pupils are required to engage, they should, as soon as possible, be induced to take a lively interest in it for its own sake; because such an interest will arouse into active exercise all the best powers of their minds, and thus lead to the most effective and salutary educational discipline. Besides, the habit of depending upon external incentives,—the love of distinction, of praise, of pleasure, or of gain, must necessarily engender selfishness, and thus, narrow and debase the mind which a generous, earnest zeal in the pursuit of a praiseworthy object would expand and ennoble.

DILWORTH, Thomas, an English teacher, and the author of several very successful and popular school text-books, among which were a *New Guide to the English Tongue* (London, 1740), which passed through more than forty editions, and a *Compendium of Arithmetic* (London, 1752); also *The Book-keeper's Assistant*, 8vo., and the *Schoolmaster's Assistant*, 12mo. These were among the most noted school books of their time. Dilworth died in 1780.

DINTER, Dr. Gustav Friedrich, a German educator, was born Febr. 29., 1760, at Borna, in Saxony. He received his first education at the *Fürstenschule* of Grimma, where, at that time, the monitorial system was in use, and the best scholars of the upper classes, under the name of *Obergesellen*, aided in the instruction of the younger pupils. Dinter greatly distinguished himself as *Obergesell*, and gave indications of the eminence which he subsequently attained as an educator. After studying theology at the university of Leipsic, and being for five years tutor in a private family, he was appointed, in 1787, pastor of a church in Kitzscher, near Borna. Here he gratuitously received young men into his house in order to educate them as school-teachers, and soon attracted the attention of the highest school boards of the country by the superior knowledge which his pupils showed on entering the normal school. He was, therefore, offered, in 1797, the position of director of the teachers' seminary at Friedrichstadt-Dresden, which he accepted, although it yielded a smaller income, hoping to find there a more extensive field of usefulness. In consequence of his able administration, the seminary attained a high reputation; but, as his health failed, he resumed, in 1807, the charge of a village church. Again he received young men into his house, and prepared them for the gymnasium, employing some of his former pupils as assistants. In 1816, the Prussian government appointed him consistorial and school councilor at Königsberg. He found the schools which he had to inspect in a deplorable condition. When he made his first tour of inspection, there were forty-two rural and two town schools, in which not a single child was able to write a letter. Twelve years later, all the boys who had been regular in their studies, in sixty out of sixty-seven schools, had acquired this ability. One year after settling at Königsberg, he received, in addition to his office as councilor, an appointment as professor at the university. He was an indefatigable writer, working, on an average, eighty-three hours a week. He died May 29., 1831. As a theologian, Dinter belonged to the Rationalists' school, though he never attacked the Evangelical school. His merits as a school inspector, teacher, and educational writer were so conspicuous, and his life was so pure, that even the opponents of his theological views, without exception, recognize the prominent position which he occupies in the history of education. He exerted a considerable influence upon the educational system of Prussia, by introducing into the state school the ideas of Basedow and Pestalozzi, which heretofore had been applied only in private institutions. He was a master of rare eminence in the use of the catechetical method of instruction, which, through his influence, not only came into general use, but was sometimes carried to an extreme. He insisted that women should receive an education not inferior to that of men, since woman bears the most prominent part in the education of the rising generation. His views on female education are laid down in a work, entitled *Malvina*. Although he did not begin his literary activity until he was forty years of age, he is entitled to a place among the most prolific educational writers in Germany. His complete works edited by Wilhelm (1841—51) are contained in 42 volumes. They are divided into four sections; the first containing his exegetical writings (12 vols.); the second, the catechetical (16 vols.), the third, the pedagogical (9 vols.), and the fourth the ascetical works (5 vols.). The most celebrated of his works, the *Schullehrerbibel*, has been severely criticised from several points; but two of his works, entitled *Die vorzüglichsten Regeln der Pädagogik, Methodik und Schulmeisterklugheit* (7th edit., 1836) and, *Die vorzüglichsten Regeln der Katechetik* (7th edit., 1827), are regarded as standard works of imperishable value.—See *Dinter's Leben, von ihm selbst beschrieben* (Plauen, 1860); SCHMIDT, *Geschichte der Pädagogik*, vol. IV.

DIPLOMA (Gr. δίπλωμα, any thing doubled, or folded), a term anciently given to a formal certificate of authority, because such documents were usually written on double or folded waxen tablets. In more modern times, the term was applied to a royal charter or to any governmental testimonial of authority, privilege, or dignity. (Hence the science of state documents is called *diplomatics*.) The term is now chiefly confined to a certificate given by a university, college, or other literary institution, as an evidence that the person upon whom it is conferred has attained a certain degree of scholarship; or, in the case of professional schools, as a license to practice a particular art.

DISCIPLES OF CHRIST, or as they prefer to be named, "The Church of Christ," a body of Baptists, sometimes called by their opponents "Campbellites," after Thomas Campbell and his son Alexander Campbell, who gave the immediate origin and distinctive character to the denomination. The original purpose of Thomas Campbell, who came to the United States, in 1808, from Ireland, as the minister of a Presbyterian denomination known as the Seceders, was to unite the various denominations of Christians on the exclusive basis of the Bible. For a time, the congregations organized by the two Campbells attached themselves to a Baptist association; but, in 1827, a distinct ecclesiastical organization was begun. The *disciples* believe in "baptism for the remission of sins," and practice weekly communion. In church government, this denomination is congregational. In 1874, a committee of conference was appointed to confer with the Free Will Baptists on a union of the two denominations. The membership in the United States, chiefly in the Southern and

Western states, is estimated at about 500,000; in the British Islands, they numbered, in 1874, 109 churches; and congregations have also been established in Canada, the West Indies, and Australia. They have always taken a deep interest in education, and have a large number of academies and seminaries, as well as several colleges of high standing. The most prominent among their literary institutions are Bethany College, founded by Alexander Campbell, and presided over by him until his death; Kentucky University, at Lexington, Ky.; the Northwestern Christian University, at Indianapolis, Ind.; Abingdon College, at Abingdon, Ill.; Eureka College, at Eureka, Ill.; and Hiram College, at Hiram, Ohio. Female colleges have been established at Columbia, Mo., Versailles and Harrodsburg, Ky., and Bloomington, Ill. Theological schools are connected with the Kentucky University and Eureka College. A Bible school for colored ministers was established at Louisville, Ky., in 1874. The number of Sunday-schools in 1874 was 2,450, with 253,000 scholars. For fuller information on the literary institutions of this denomination, see the special articles on the colleges above mentioned.

DISCIPLINE (Lat. *disciplina*, from *discere*, to learn), a term which, according to its literal acceptation, means the condition of a disciple, or learner; that is, subordination requiring strict obedience to certain directions or rules, or conformity with a system of instruction, having for its object some kind of training. Hence the word *discipline* is sometimes used in an active sense as synonymous with training or culture, as in the expression *intellectual or moral discipline*. Sometimes it is employed to denote school government; and, frequently also punishment for the commission of offenses. The word, however, should, particularly in education, be confined to its strict meaning as above defined. In all teaching, there is need of attention and obedience on the part of the pupil; and as an important aim of education is to instill certain habits as a basis for the formation of character, the learner must be required constantly and punctiliously to conform to certain rules and general precepts; and the discipline of the teacher is good or bad in proportion as he succeeds in enforcing obedience to these necessary rules. In large schools, the system of regulations becomes more complicated, and a habitual ready attention to them on the part of the pupils produces what is technically called *order*. (See ORDER.) This kind of discipline assimilates to what is required in an army, with the special object of so unifying a large number of men that they may be moved as a single person. In military discipline, the individual is sacrificed to the general object to be attained by its enforcement; indeed, he has no claim to consideration, except what is secondary and subordinate. The danger, in the management of large schools, is that the same principle will be applied, the interests of the pupils as individuals being lost sight of in the endeavor to enforce mere discipline for the purpose of general management or show. In education, however, the interests of the individual should never be disregarded. School machinery,—marching and countermarching, simultaneous movements, the motionless gaze, or the dead silence of multitudes of children, all perhaps trembling under restraint, certainly constitutes a kind of discipline, but a kind, if not absolutely pernicious, of but little educational value. Order is indispensable to the proper working of a school; but it has been well remarked that "good order involves impression rather than repression; it does not consist in a coercion from which result merely silence, and a vacant gaze of painful restraint; but it proceeds from the steady action of awakened and interested intellect,—the kindling of an earnest purpose and an ambition to excel." Hence, the discipline that is necessary to produce order in a school or class, is of secondary importance, in comparison with that which has for its object to train the intellectual and moral nature of the pupils as individuals. "By discipline," says Currie, "we understand the application of the motives which prompt the pupil to diligent study and to good conduct;" that is, such motives as the desire of the approbation of teacher or parent, emulation, or the desire of distinction, the hope of reward, and the fear of punishment. To what extent these motives should be resorted to, and their comparative efficacy in dealing with children of different temperaments and traits of character, constitute important subjects for careful discussion. (See GOVERNMENT, and REWARDS.)

All moral discipline must be directed to the training of the will; and it is in this connection that the consideration of motives becomes of primary importance. Educators are at considerable variance as to the proper methods of controlling the will of children. Some advocate, in all cases, an application of the law of kindness, and contend that physical force should never be brought in to coerce or restrain even the most self-willed pupil; others are of the opinion, based on experience, as they claim, that, in some cases, physical punishment is indispensable. (See CORPORAL PUNISHMENT.) The best training is, without doubt, that which brings into play the pupil's higher nature, and leaves him habitually actuated by motives derived from it. The child cannot be always restrained by fear,—that is, the fear of immediate physical pain; and, hence, the discipline to which he is to be subjected, should be such as will implant motives and principles of conduct that will be effective as a means of permanent self-control. The mere subduing of the will of children is not sufficient; indeed, it may be injurious. The aim of the teacher should be to bring the will into subjection to conscience and a sense of right; in the words of a distinguished educator, "to discourage the child in the proper development of its nature has a tendency to crush out the life of the child rather than to cultivate that life into better methods of thought and action." The motives brought to bear in the school-room should, as far as possible, be those which will be operative in after life. Special school incentives, such as merit marks etc., are useful and proper within certain limitations; but the great aim should be to dispense with them, and substitute natural for artificial motives—motives that will cling to the child during his whole after life. Unnatural, overstrained discipline, that is, the exaction of a precise conformity with the minor regulations of a school, not only crushes out the individuality of the child for the time, but in its reaction engenders a feeling of resistance in his mind, which, having no outward demonstration, naturally results in a habit of deceit. Nothing is so baneful to the nature of a child as an atmosphere of tyranny and arbitrary power; and any system of discipline that is founded exclusively upon it, must produce the worst effects possible. After all, the best discipline, even if the outward *order* should not be so exact, is that which is brought to bear upon the pupils through the consistent example, and the kindly heart-felt sympathies of the living teacher, whose very presence is sunshine to his school, and who quells waywardness by the very sublimity of his patience, firmness, and perfect self-control. (See CONSCIENCE, CULTURE OF.)

DISPUTATIONS, the old form of rhetorical exercises in which candidates for degrees, in the universities, were formerly required to exhibit their powers. Hence the term *wrangler* as applied in the University of Cambridge, England, to those who have attained first-class honors in the public mathematical examinations. These disputations occupied a very prominent place in the college work when the formal Aristotelian or syllogistic logic (*dialectics*) was much in vogue, as being the most valuable of all accomplishments, and the best test of educational progress. They were of two kinds: *ordinary*, or those performed privately in term time for practice; and *extraordinary*, or those performed publicly as the necessary qualifications for a degree. The exercise finally became absurd and was held up to ridicule. The following gives a humorous description of the method of disputation at Oxford, England, in the last century:

> "The persons of this argumentative drama are three; namely, the *opponent*, the *respondent*, and the *moderator*. The opponent is the person who always begins the attack, and is sure of losing the day, being always (as they call it) on the wrong side of the question; though oftentimes, that side is palpably the right side, according to our modern philosophy and discoveries. The respondent sits over against the opponent, and is prepared to deny whatever he affirms, and always comes off with flying colors, which must needs make him enter the lists with great fortitude and intrepidity. The moderator is the hero, or principal character of the drama, and struts about between the two wordy champions during the time of action, to see that they do not wander from the question in debate; and when he perceives them deviating from it, to cut them short, and put them into the right road again; for which purpose he is provided with a great quantity of subtle terms and phrases of art; such as, *quoad hoc et quoad illud, formaliter et materialiter, prædicamentaliter et transcendentaliter, actualiter et potentialiter, directe et per se, reductivè et per accidens, entitativè et quidditativè, etc.*

The same author characterizes the exercise, which was originally designed as a public proof of the student's progress in the art of reasoning, as "no more than a formal repetition of a set of syllogisms upon some ridiculous question in logic, which the students get by rote, or, perhaps, only read out of their caps, which lie before them with their notes in them." On which abuse he thus enlarges:

> "These commodious sets of syllogisms are called *strings*, and descend from undergraduate to undergraduate, in a regular succession; so that, when any candidate for a degree is to exercise his talent in argumentation, he has nothing else to do but to inquire among his friends for a string upon such or such a question, and to get it by heart, or read it over in his cap as aforesaid."

For a long time the study of *dialectics*, or the art of logical disputation, occupied a prominent place in the university *curriculum* both in England and on the continent; and young men were allowed to waste their time and intellectual energies upon these useless subtleties. "In the German universities of the 14th and 15th centuries," Von Raumer says, "the lectures were accompanied with frequent disputations, in which teachers and scholars took part. The regular disputation day was Saturday. *Sophismata* and *quæstiones*, after the fashion of theses, furnished the basis for the disputing. The purpose of them all seems to have been not so much to deal with the truth of the matter as with the form; they were dialectic fencing with all the tricks of sophistry, exhibitions of skill in arguing for and against the same proposition." As scholasticism declined, this learned trifling became obsolete; and where disputations are now required they are merely of a formal character.—See KNOX, *Liberal Education*, vol. II. (11th ed., London, 1795); VON RAUMER, *Geschichte der Pädagogik*, vol. V., trans. in BARNARD's *German Universities* (N. Y., 1859).

DISTRICT OF COLUMBIA, the federal district in which the capital of the United States has been located since November, 1800. It originally consisted of portions of territory ceded to the general government by Maryland and Virginia, and forming a square of 10 miles, and hence having an area of 100 sq. m., 64 on the Maryland side, and 36 on the Virginia side. It was organized in pursuance of an act of Congress, passed June 28., 1790, which accepted this "district of territory" for the "permanent seat of government of the United States," and provided that the government should be removed from Philadelphia to that place on the first Monday in November, 1800. The portion on the Virginia side of the Potomac was retroceded in 1846, leaving 64 sq. m. as the area of the District. Charters were subsequently granted to the cities of Washington and Georgetown, and the District was under the direct control of Congress; the people, however, having no representation therein and no voice in the election of the president of the U.S. In 1871, a territorial government was organized, the charters of Washington and Georgetown were repealed, and the administration of the affairs of the District was committed to a governor and legislative assembly. By act of Congress, June 20., 1874, the territorial government was abolished, and the administration was vested in three commissioners to be appointed by the President with the consent of the senate.

Educational History.—The charter of the city of Washington, amended in 1804, first made provision for the "establishment and superintendence of schools" in the District; and an act of the city council, the same year, required the appointment of thirteen trustees to carry these provisions into effect. Six of these trustees were to be chosen by those persons who contributed to the support of the schools. Among the trustees elected by the contributors was Thomas Jefferson, who was made president of the first board convened. The first action taken by the new board contemplated the establishment of schools, a college, and a university—the whole to constitute an institution "in which every species of knowledge essential to the liberal education af youth may eventually be acquired." As the result of this action, two schools were established, which, in 1809, it was resolved to merge into one. About this time (1810), the citizens of Georgetown applied to the corporation of their city, to set apart a lot on which suitable school buildings might be erected. Their application is supposed to have been successful, as eight months afterward the officers of the city attended the laying of the corner-stone of a new school-house; and, five months after that, a new school, organized upon the Lancasterian plan, was opened. In 1812, the sum of $1,000 was appropriated by the council for the purpose of building an addition in which the female pupils might receive separate instruction. The reputation of this school had extended so far, that the committee of the Washington school board, on receipt of a letter from one of the teachers of the Georgetown school, suggesting the establishment of a similar school in Washington, acted immediately upon the suggestion, and procured the passage of an order "that there shall be one school in the city of Washington, as near as practicable in the center thereof, to be conducted on the plan of, and as nearly correspondent as may be with the forms observed in, the Lancasterian School." Congress, meantime, by a joint resolution, authorized the establishment of a lottery for raising $10,000 to be used in the organization of two Lancasterian schools. These schools must have been established, as we find the board of trustees, in 1813, electing officers and supervisory committees for the Eastern and Western schools, and for the Eastern and Western Lancasterian schools. In 1833, the subject of free schools in the District appears to have engaged the attention of Congress, but nothing decisive was done; and, on the 4th of May of that year, the city corporation applied $200 for the relief of the Georgetown school. The authorities of the three cities Washington, Georgetown, and Alexandria, in 1837, united in an appeal to Congress for an appropriation for the endowment of a system of education that should embrace the whole District of Columbia, by which the children of all might equally enjoy the inestimable advantages of a liberal education. The effort, however, was of no avail, and the schools were provided for by private contributions and annual appropriations from the city treasury till 1842, when the corporation of the city ordered that the schools should be "taken under the exclusive care of the corporate authority." To this end, a board of guardians of the Georgetown school was appointed, with full powers to provide for the keeping of said schools, and to manage the same for the public interest. In 1844, the public-school system was re-organized by the abolition of the two ward boards, and the creation of a new board of twelve trustees with ample power for the complete supervision and control of the schools. These were to be open to all white children between 6 and 16 years of age, on prepayment of a tuition fee of not more than 50 cents a month, the pupils furnishing their own books, except in the case of children of indigent parents, who were taught, and furnished with books free of cost. The same act appropriated $3,650 for building two school-houses, and for renting rooms for school purposes. Between 1845 and 1848, ten new primary schools were established, tuition fees were abolished, and a tax of $1 was ordered to be annually levied on every white male citizen for the use of the schools. The changes during the next five years (1849 to 1853) were, the establishment of 13 new primary schools, the buying of lots, and building of new school-houses, the increase of teachers' salaries, and an annual average appropriation of about $15,000. In 1857, an attempt was made to bring the public-school system more into conformity with the system which had been adopted with such success by some of the Eastern states, by creating the office of superintendent of public instruction, and making an assessment of 10 cents on every $100 of taxable property, but it was not successful. In 1860, the attempt to pass so much of the original act as related to taxation, was renewed, and with success, a tax of 10 cents on the $100 being ordered. Since that time, the progress of the schools has been marked. In 1864, the first school for colored children went into operation. The same year, Congress approved an act to organize public schools in the county of Washington, exclusive of the cities of Washington and Georgetown. The first obstacle encountered in the carrying out of this law was a disagreement in the board of commissioners in regard to the division of the school fund among the white and colored schools. A decision was reached in July; and, the same year, two schools were opened, affording instruction to 150 pupils. The following year, five schools were opened, and the few schools for colored children previously existing were incorporated into the public-school system. Since the creation of the board of guardians in Georgetown, in 1842, no changes except those incident to the ordinary routine of a successful school system are recorded. The act of Congress which, in 1871, placed the District under a territorial form of government, led to changes in the form and composition of the board of trustees, and to many in the details of the management of the schools; but the efficiency of the latter was in no way impaired. In 1874, the school boards of Washington, Georgetown, and the county were consolidated into one board of 19 trustees, of whom 11 were residents of Washington, 3 of Georgetown, and 5 of the county. In 1869, the office of superintendent of public schools of Washington was created, Zalmon Richards being chosen to the position. The following year, he was succeded by J. O. Wilson, who has continued to discharge its duties to the present time. The present superintendent of colored schools for the cities of Washington and Georgetown is G. F. T. Cook.

School System.—The control of the schools throughout the District rests with the board of trustees already mentioned, who report directly to the triumvirate commission created, in 1874, for the government of the District. This commission appoints a superintendent of white schools in Washington, Georgetown, and the county, and a superintendent of colored schools in Washington and Georgetown. No permanent school fund exists, the schools being maintained either by special appropriations by Congress, or by direct taxation and voluntary contributions. The second method—that of direct taxation—has been most effective, the amount of tax per dollar of assessed property for the support of the white schools in the District and county having been, during the past year, 3.7½ mills for Washington, and 3.7½ mills for Georgetown; the amount for the colored schools was 3.3 mills in the former, and 4 mills in the latter. Tuition is free, the cost of books only being charged to scholars; but, in case of poverty, this charge is remitted. The legal school age is from 6 to 17 years.

Educational Condition.—The principal items of *school statistics*, for the year 1874—5, are as follows:

Number of educable children, white..	19,489	
" " " " colored	9,328	
Total......		28,817
Number of children enrolled, white..	11,241	
" " " " colored	5,489	
Total......		16,730
Average daily attendance, white....	8,520	
" " " colored..	3,924	
Total......		12,444
Number of schools, white............	166	
" " " colored..........	75	
Total......		241
Average number of teachers, males, white...	9	
" " " " females " ...	164	
Total..		173
Average number of teachers, males, colored	2	
" " " " females "	86	
Total..		88
Estimated enrollment in private and parochial schools for the year................		6,837

The school revenue for the year was:

Local taxation for white schools	$361,156.99	
All other sources " "	93,749.67	
Total........		$454,906.66
Local taxation for colored schools.....................	$103,003.92	
All other sources for colored schools.....................	71,454,12	
Total............		$174,458.04
Expenditures....		$334,547.36

Normal instruction.—The normal school at Washington was organized in 1873, for the purpose of supplying the public schools of the city with teachers. The proportion of female teachers in the schools is so large—95 per cent—that no provision has been made in the normal school for the education of males. The number of pupils is limited to 20. They must have been, before entering, pupils in the female grammar schools of the city, and at least 17 years of age. The course of study is one year in duration. The number of pupils who received certificates last year was 20; the number who received diplomas, 11. At the normal department of Howard University, 7 students were graduated.

Secondary Instruction.—Only one high school is in existence in Washington; namely, that for colored children, in the north-western section of the city. About 120 *private* and *denominational schools*, and *academies* are reported in the District, situated principally in the cities of Washington and Georgetown. Of these schools, 110 are for white children, and 10 for colored. The Washington Business College furnishes instruction to persons of all age and both sexes, who desire to enter mercantile life.

Superior Instruction.—The colleges and universities are as follows:

NAME	Location	When founded	Denomination
Columbian University ...	Washington	1822	Baptist
Georgetown College......	Georgetown	1789	R. C.
Gonzaga College..........	Washington	1858	R. C.
Howard University.......	Washington	1866	Non-sec.

Professional and Scientific Instruction.—Schools of law, medicine, and theology exist in connection with colleges and universities; and scientific instruction, also, is to a certain extent given, but no special institution for the last exists. Instruction in theology is given to colored students preparing for the ministry by the Wayland Institute established by the colored Baptists. The National University Law School has 3 instructors, and 100 students. The National College of Pharmacy was organized in 1872.

Special Instruction.—The Columbia Institution for the Deaf and Dumb was founded by Amos Kendall, and was chartered by Congress in 1857. Its sources of revenue are tuition fees, congressional appropriations, and voluntary contributions. In addition to the preparatory department, it has a collegiate department—the only college for deaf-mutes in the world. Its course extends over 11 years—7 in the preparatory department, and 4 in the college.

DISTRICT SCHOOLS. See PUBLIC SCHOOLS.

DITTES, Friedrich, a German educator, was born Sept. 23., 1829, at Irfersgrün near Zwickau. After studying at the university of Leipsic and obtaining the degree of Doctor of Philosophy, he was appointed director of the teachers' seminary at Gotha, and at the same time "*Schulrath*" (school-councilor). In 1863, he accepted a call as director of the *Pædagogium* of Vienna, which had just been established by the municipal government of that city. In this position, he took a prominent part in the discussion of all educational questions in Austria and Germany. In 1873, the city of Vienna elected him a member of the lower house of the Austrian *Reichsrath*, in which he formed, with only four other members, the "democratic" (radical) party. Dittes is one of the chief representatives of the pedagogical views of Beneke (q. v.), which he explained and defended in a number of works. The most important are the following: *Grundriss der Erziehungs- und Unterrichtslehre* (4th edit., Leips., 1874); *Methodik der Volksschule* (Leips., 1874); *Lehrbuch der Psychologie und Logik* (Vienna, 1874); *Geschichte der Erziehung und des Unterrichts* (4th edit., Leips., 1875); and *Schule der Pädagogik* (Leips., 1876). These five works present a complete view of the science of education and instruction. He has also edited the *Pädagogische Jahresbericht.*

DIVERSIONS. An important part of the education of youth consists in affording them an opportunity for natural, unrestrained diversions, in which they may have free scope to exercise mind and body, particularly the latter, according to their inclinations. During the early period of childhood, no tasks can be or need be imposed to guide or accelerate the natural development of the mental and physical faculties; the buds of humanity open of themselves, if their condition is normal, and their growth is not arrested by injudicious interference. At first, nature, as a wise educator, trains through the pleasurable emotions; for the impulses which she inspires are all to varied activity, and activity is delight when nerves and muscles have the spring of health and vital energy. A few lessons in conscious restraint are all that this period requires or admits. They are purely negative, checking the violence of natural impulse, not urging the child's activity in any particular direction. This is the education of home and parents, when presided over by love and good sense, during the first years of the child's existence,—a period of continous diversion. "A child, before its fifth year," says Isaac Taylor, "and even later, if in perfect health, does not know that the day is long; for the infant mind glides down the stream of moments, conscious only of the present, and altogether without thought of periods, intervals, and measured seasons of duration; the infant mind has no weariness nor disquietude connected with the slow numbering of hours, days, weeks, months." When the age for serious application begins,—the season for labor, or occupation under constraint, the educator should strive to make the transition as easy and gentle as possible. Frequent diversions should be intermingled with formal exercises; and much will be gained if those exercises be made to partake of the nature of diversions, by having the characteristics of novelty and variety, and by stimulating the child's curiosity. As the age of the child increases, passing into youth, the times for regular occupation and for recreation, or diversions, become more distinctly separated. The boy or the girl is gradually led to feel that there are duties to be performed, as well as sports to be enjoyed; and that the pleasure received from the latter will be greatly increased by the feeling that it has been earned by a conscientious devotion to the former. Hence, under no circumstances, should youth be deprived of their opportunities for free and innocent recreations, except as a penalty for misdoing or neglect of duty. The office of diversions is twofold,—recreation and exercise. The former is absolutely essential after studious employment, to refresh the mind; and the latter is needed to give health and vigor to the body. Those sports are the best, therefore, which combine cheerful relaxation of the one with the due employment of the other. "Among the Jesuits," says D'Israeli, "it was a standing rule of the order, that after an application to study for two hours, the mind of the student should be unbent by some relaxation, however trifling." Boys, if left to themselves, will take violent exercise, and thus develop their physical powers and promote their growth; and girls will select sports of a lighter character,—such as are adapted to their different physical constitution. It is a serious error on the part of parents to keep their boys under painful restraint, and, from solicitude for their safety, to debar them the enjoyment of diversions common to their age, because attended with some degree of danger. Excessive maternal tenderness and care thus exercised must result in rendering boys effeminate, and unfit to cope with the dangers and trials of subsequent life. The only need of restraint is to keep boys from vicious actions, low company, petulance and a contentious spirit in their sports, and from too daring and perilous feats of agility and strength. Gymnastic exercises may also be made a recreation, and, when carried on with some system, they constitute an important part of a regular physical education. (See GYMNASTICS.) What may be called *athletics*,—rowing, swimming, riding, ball-playing, cricket, etc., are greatly to be encouraged in the maturer periods of youth, not only on account of their effect in developing physical vigor, but because they keep those who actively engage in them from those vicious indulgences which constitute the great peril of that age. Cicero well said, *Maxime hæc ætas a libidinibus est arcenda, in labore corporis exercenda.* Milton strongly recommends these active exercises in his tractate *Of Education*, and Locke in *Thoughts concerning Education* especially enjoins "exercises of manual arts." As for the more quiet in-door pastimes, they should be encouraged with moderation. Chess and draughts may be permitted; but, in these games, particularly in the former, there is great danger of excess; and it has never been demonstrated that a good chess-player is, on that account, good for any thing but to play chess. The game of billiards gives training to the hand and the eye, and involves considerable exercise, moderate but healthful; yet it may be doubted whether youth should be encouraged to engage in it, because of its fascinating character and its tendency to draw their attention from more useful and necessary employments, not to mention the dangerous associations of the billiard room. The old-fashioned amusements of fencing and boxing had much to recommend them, but they belonged to a state of society in which they were deemed useful as accomplishments, and encouraged the development of a combative spirit. These games and diversions involve chiefly the exercise of the body; but there are others which require the exclusive application of the mind. Such were, in former times, the *Ludi Leibnitiani*, including the *Ludus Finium*, the Game of Ends (uses and purposes), and the *Ludus Remediorum*, the Game of Remedies (expedients). These are briefly described by Knox in *Liberal Education* thus:

> "One asks, what's the use of this or that? as, for instance, what's the use of a hat? the other is to find as many ludicrous uses as he can for it. What's the use of a hat? *Respondetur, pileus adhiberi potest ad hauriendam aquam, ad ventum excitandum, ad portandas nuces, poma, etc.;* and so of any thing else. *Ludus Remediorum*, or the Game of Expedients, or making shift, is thus played: Difficult situations and circumstances are contrived, and the answerer is to devise means to extricate himself, or to find succedanea for wants—as, how will you write without ink? etc."

Sports, however, that have for their express purpose the combining of recreation with mental improvement rarely succeed in their object; since, as soon as the novelty wears off, they are felt as a task, and hence abandoned.—See D'ISRAELI, *Curiosities of Literature*, s. v. *Amusements of the Learned.*

DOANE COLLEGE, at Crete, Saline county, Nebraska, was chartered in 1872. The first freshman class was formed in 1873. It is under the control of the General Association of Congregational Churches of Nebraska, and is designed for the education of both sexes. Its permanent buildings are to be erected on a high plateau overlooking the city, the Big Blue River, and a wide reach of prairie beyond, which together present a scene of beauty seldom surpassed. The college is out of debt and has the following assets: $18,785 in interest bearing notes; $1,578 in non-interest bearing notes and subscriptions; 200 acres of land in Polk county; 600 acres adjoining the city of Crete, 320 of which are broken; 58 city lots in Crete; also the academy building and the block on which it stands, valued at $8,000. The college year is divided into three terms; the cost of tuition per term is $7 in the full classical course, $5 in higher English and modern languages, and $3 in the common English branches. These charges are remitted in favor of the children of home and foreign missionaries. Room rent is free. The college has been supported mainly by contributions from the friends of education and religion in Nebraska and Massachusetts. It has made special efforts to reach those whose ignorance of the English language too often constitutes a barrier to all Christian activity in their behalf. There are (1876) 3 instructors and 58 students, nearly all in the preparatory department. The institution has been in charge of D. B. Perry from its organization.

DOCTOR. See DEGREES.

DOEDERLEIN, Ludwig, a noted German philologist and teacher, was born at Jena, in 1791, and died in 1863. He was a son of the eminent German Protestant divine and critic, Johann Christoph Döderlein. He studied at several German universities, including that of Berlin; and, in 1815, he was appointed professor of philology at the academy of Bern. He afterwards filled the position of professor of philology at Erlangen. His chief writings are *Lateinische Synonyme und Etymologieen* (6 vols., 1826—38), with a supplement, *Die lateinische Wortbildung* (1838); *Handbuch der lateinischen Etymologie* (1841); *Homerisches Glossarium* (1850). All these works were published at Leipsic. He also edited several classical works.

DONALDSON, John William, an eminent English scholar and teacher, was born in London, June 10., 1811, where he died in 1861. He was educated at the university of London and at Trinity College, Cambridge, graduating as B. A. at the latter, in 1834. For some time, he held the office of assistant tutor at Trinity College, during which period he published *The Theatre of the Greeks*, which is still highly valued as a college class book. He, subsequently, held the office of head-master of the grammar school of Bury St. Edmonds, which he resigned in 1855, and delivered a course of lectures at Cambridge on Latin synonyms. In 1839, the first edition of the *New Cratylus* was issued, a work of profound erudition, embodying the principles of comparative philology as established by the researches of Bopp, the brothers Grimm, and other German scholars. This work, as enlarged and improved in the edition of 1859, is still the standard English work upon the subject of which it treats. In *Varronianus* (1846), he attempted to accomplish for Latin philology what the *New Cratylus* had done for Greek. His other publications were editions of some of the classics, and several theological works—among the latter, *Christian Orthodoxy* (London, 1867).

DRAWING has been defined as the expression of thought by means of lines, or as a visible presentation upon a surface of our conception of a form. Hence its usefulness in every department of mechanical science or effort; since each of these departments is based upon the conception of forms and their realization in material products. Drawing is thus supplementary to ordinary language, the function of which is to recall ideas to the mind by their abstract representatives in words; but words can recall conceptions of form only to a very limited extent, and scarcely at all those of an irregular or complex character. On the contrary, drawing, by a combination of the simple elements of lines, of various kinds and in various relations to each other, can transfer from one mind to another the most complicated conception, whether it be that of an actual object, or the creation of the imagination. Thus, the machinist has before him an exact representation of the piece of mechanism which he is to construct; the architect delineates the elevations and plans of the edifice which the builder is to erect, and the industrial draughtsman represents the designs which are to embellish the varied fabrics of the loom. In short, the uses and applications of this beautiful and expressive form language are infinite, stamping it as one of the most indispensable accomplishments of civilized man, and, consequently, one of the most important elements of his education. The value of drawing as a department of general or popular education, has been pretty fully treated in the article on Art-Education, to which the reader is referred for information on this point. In the present article, it is designed to present a brief outline of the relation of drawing to the various grades of education, with practical suggestions as to the methods of teaching it.

Drawing may be divided into two distinct departments, instrumental and free-hand, the former being principally employed in the mechanical, engineering, and architectural branches of industry; the latter, by artists, designers, and others. The two divisions are sometimes referred to as scientific and artistic, because the subjects coming under the first group, are based on scientific principles, and the results obtained are capable of demonstration by geometry; whilst free-hand work, either in imitation or original design, employs the perceptive rather than the reasoning faculties, and its results have to be judged by the standard of taste, in all features which do not involve a question of fact.

Instrumental Drawing.—The group of subjects which come under this division may be classified as *elementary* or *applied;* the first teaching methods of obtaining accuracy of form, and its appearance under given conditions; the second, applying this power of drawing to practical purposes, in the arts of planning, construction, and design.—The *elementary* subjects are: (1) Plane geometrical drawing; (2) projection of solids, (*a*) radial or perspective, (*b*) parallel or orthographic; (3) projection of shadows, (*a*) radial or perspective, (*b*) parallel or orthographic and isometric.—The *applied* subjects are: (1) Architectural drawing and building construction; (2) machine drawing, construction, and design; civil and military engineering; (3) surveying and topographical drawing; and (4) ship draughting, and marine architecture.—The elementary subjects teach the student how to draw the forms of lines, planes, or solids, either as the eye sees them by perspective, or as they actually exist, by orthographic or isometric projection. The forms usually employed in teaching, are regular geometric planes and solids, conveying, by the instruction given, the principles of representation by lines, on planes of delineation, when the objects are seen in space, or in a defined position in relation to the eye. The study of the elements of instrumental drawing is necessary, therefore, because by it we learn how to draw, as a science, which is obviously required before we can apply it to purposes involving a knowledge of the science. The elementary branches may thus be considered purely educational, whilst the advanced or applied divisions may be described as industrial.—In the applied subjects, a knowledge of plane and solid geometry prepares the architectural draughtsman to make working drawings for the builder, the carpenter, the mason, and other mechanics employed in the erection and construction of buildings; displaying, by geometrical drawings made to a regular scale, the true forms and dimensions of all parts of the fabric; enabling the builder to calculate exactly the quantity of materials required in its construction, and each artisan to prepare his share of the work, so that it shall truly fit its place. The science of projection and perspective is the basis of the language by which the architect expresses his design for the whole structure, displaying his arrangement of the plan, his design for the elevation, the true form of the building in its several aspects, and the appearance of the whole by means of a perspective view.—Again, in mechanical engineering, the designer of a machine must be thoroughly acquainted with projection as a science, before he can express on paper his devices for securing the speed and power required for his purpose. Working drawings have then to be made of the several parts and details, to furnish accurate information to the model maker, by which he may make each part of the machine in wood, to the molder who has to cast it in metal, and for the guidance of the finisher and fitter who complete the work and erect the machine. So, also, in surveying and topographical drawing, the actual features of a country or estate are ascertained through the application of plane and solid geometry, and reduced from the natural size to a plan which is, in all respects, like the true plan of the original, although on a different scale. By the use of such scale drawings, railways are planned and executed, cities and towns are laid out; and, by civil and military engineers, who employ the same means of delineating their work, cities are drained, supplied with water, or fortified and protected, bridges are built to span the river, and piers made to encroach upon the sea, tunnels made to cut through hills and mountains, and embankments and viaducts to fill the inequalities of valleys.—The marine engineer or naval constructor is equally dependent upon his knowledge of projection, in laying out the lines of his ship or boat, in displaying its capacity for freight and modeling its shape for speed. All these features of his design are expressed by means of drawings, which are the application of plane and solid geometry to a special industrial purpose. It will be evident, therefore, that the constructive arts, which bear so important a relation to modern civilization, and employ so vast a number of persons, are all dependent upon drawing for the initiation of their schemes. At the foundation of successful work, in any and all of their departments, lies a knowledge of elementary drawing, which, regarded as a language, is of such a character, that it may be efficiently taught in the common schools of America, by the regular teachers employed to give instruction in general subjects, as soon as this practically useful subject forms a part of all normal-school education. Pure geometry may be considered the study of all these sciences in the abstract, and this is successfully pursued in the schools and colleges; scientific or instrumental drawing, under the headings called elementary subjects, would be the concrete application of geometry to the needs of practical education, to be applied at a future time to actual industry.

Free-Hand Drawing.—As the name implies, this kind of drawing is the expression, by the unassisted hand, of what the eye perceives, or the mind, or imagination, conceives. Its results, therefore, are dependent upon the truthfulness of observation or power of conception possessed by the draughtsman, and, in some measure, upon his manipulative skill as a workman. As a rule, however, the power of drawing, or expression, is equal to the perceptive power, and imperfect or faulty work proceeds generally from a lack of clear understanding of the subject rather than want of hand skill.—As in instrumental drawing, free-hand drawing consists of two groups of subjects,—elementary and applied, the first being educational, and the second, industrial or professional. In the elementary division, are all those branches of study or exercises which develop the imitative faculties, embracing all kinds of copying from flat examples or round objects, including also the subjects of geometrical drawing and perspective, by which alone the truthfulness of expressed form can be tested. In applied drawing, the language of form is employed to embody new ideas, either as original designs for industrial art and manufactures, or to express the ideal of fine art, the work of the imagination. It will be seen, therefore, that both scientific and artistic drawing, by instruments or by the free hand, have a common characteristic; they both involve a knowledge of, and skill in, drawing as a language, before the language can be employed for original purposes. To continue the analogy, and regarding drawing as the language of form, its alphabet consists of two letters, the straight line and the curve. Simple combinations of these, by elementary practice, produce, as it were, words of one syllable; the grouping of several objects in a drawing, may be described as a sentence; and an original design is the same as a composition or essay on a given theme. The artist uses the expression "out of drawing" in precisely the same sense as a scholar employs the term "ungrammatical," and (other terms being substituted) the criticism which has been made on a poem or a work of fiction, might apply exactly to a historical picture or an ideal figure, possessing similar characteristics. A great change has occurred in the opinion of educators, within the past quarter of a century (from 1850 to 1875) on the question of the possibility and advisability of teaching drawing to all children. Before the beginning of that period, it was generally believed that the ability to draw was a rare endowment rather than a power which could be acquired by all intelligent persons; and the sort of picture making, of a nondescript kind, which was then called drawing, could only be estimated, as it deserved, as a useless waste of time, that might have been wisely employed to better purpose. Experiments, in several European countries, upon large classes of children, and even in whole grades of schools, demonstrated the proposition that every one who could learn to write could learn to draw. In the schools of the Society of Friends in England, drawing had long been taught to every child, before the above conclusion had been arrived at; and there was no more inequality of ability displayed by the children in that subject than in any other. In England, whose display of industrial art in 1851 was little less than a national humiliation, the government, seeking after a remedy, took counsel of the teachers in the common schools, and requested some of them to try the experiment of teaching elementary drawing, in their classes, to pupils consisting entirely of the children of working men. After a year's trial, a convention of school-masters in London, about the year 1852, recorded as their opinion that all children who could learn at all, could be taught to draw, giving as the basis of their conviction that, during their year of experiment, "half of the time previously given to writing had been given to drawing, with the result, that the writing had been better, and the power of drawing was a clear gain." From this time, aided by strong encouragement from the government, the subject came more and more into favor amongst educators, until it is now general in the schools. Concerning the possibility of teaching all persons to draw, an art master of long experience says, "There are but four classes of human beings whom it is not found practicable to instruct in drawing. They are the blind, the idiotic, the lunatic, and the paralytic. Of the rest of mankind and womankind, exactly one hundred per cent can be taught to draw." (*Art Education, Scholastic and Industrial;* Boston, 1873.) The same opinion is held by those teachers who have tried the experiment in the public schools of Boston, Mass.—Where drawing may have failed as a subject of instruction in the common schools, it has probably been treated as a special subject, taught by special teachers to the older pupils only, in the last year or two of school life. When regarded as one of the elementary subjects of general education, and taught by the regular teachers, it has never failed. To ensure success in teaching the subject in the public schools, the following conditions are necessary: (1) Only those elementary branches should be taught which are educational in their influence, and the knowledge conveyed by them of general use (such as have been described as being at the foundation of all constructive industry). (2) Instruction in drawing should begin with school life, and end only when school, college, or university education is completed. (3) At the basis of all instruction is geometrical drawing, which illustrates the facts of regular forms; and perspective, which determines the appearance of those facts. (4) Original design, either elementary or applied, should form a part of the regular exercises required from pupils, alternating with other exercises, such as drawing from memory, and dictation, in order to give variety to the study. (5) The principles of drawing, and of shades and shadows, should first be taught from regular forms, and with scientific method and accuracy, before the pupils are allowed to draw and shade irregular forms, with no guide but their own observation. All practice should proceed from the simple to the complex, from the regular to the irregular, from the fact to its appearance. (6) The best preparation for truth and beauty of design, is an intimate acquaintance with the greatest works of the past and present, and a complete mastery of all the methods and vehicles of expression; so that, on the foundation of knowledge and with unhindered skill, the draughtsman and artist, educated by study, and made powerful by practice, may impress on their works the stamp of originality. To illustrate these propositions, programmes of instruction in drawing are here given in outline:

Primary and Grammar Schools.

1st *year*.—The *names* of geometric forms and lines; drawing straight lines and their combinations into simple forms; also, the same forms from memory. (All work on the slate.)

2d *year*.—Dictation and memory drawing of geometric patterns; simple designs composed of straight lines and simple curves. (Slate work.)

3d *year*.—Practice on paper of what has been previously learned; also in drawing, with readiness, from memory and dictation, forms previously drawn from copy. Designing new combinations from copies.

4*th year*.—Free-hand outline design, geometrical drawing, model drawing of both curved forms and objects bounded by right lines.

5*th year*.—Drawing ornaments and objects of historical character, as Egyptian lotus forms, Greek vases, etc.: the same to be drawn also from memory; geometrical drawing of a more advanced character.

6*th*, 7*th*, *and* 8*th years*.—Free-hand drawing and design, geometrical drawing, model drawing (from the solid object), and free-hand perspective (developing ideas in preparation for advanced work), dictation and memory drawing: design with half-tint back grounds. Botanical names and forms. Colors and the first principles of their harmony.

High Schools.

1st *year*.—Linear perspective by the use of instruments, parallel; botanical lessons, with diagrams in color, model drawing, from solids, in light and shade, half-tint, cross-hatching and stump. Lessons on architectural styles, without drawings.

2d *year*.—Linear perspective, angular; design in harmonious colors, from flowers and foliage; drawing from plants in outline; object drawing in one color, as fruits etc., from flat copies and from casts.

3d *year*.—Linear perspective, oblique; painting from flowers and fruits; study of the human figure, in light and shade, from copies; drawing foliage from plaster casts; applied design for manufactures, such as carpets, lace, paper-hangings, pottery, glass, frescoing, metal work, etc.

4*th year*.—Lessons in painting landscapes, from nature; drawing the human figure, from casts; lectures in architectural styles, and on schools of painting; also, on the history and practice of industrial art; and on design applied to manufactures.

The principle on which every course should be arranged is, that before attempting to draw anything, the pupil should be made to understand it; that is, to have as clear a conception of it as possible. Hence, in the first year, the young pupil is considerably occupied in simply learning the names of forms, in order to impress them upon his memory. When this principle is observed, that the cultivation of the understanding should precede drawing, the latter will never be difficult or uninteresting.

Industrial-Drawing Classes.

I. *Instrumental Drawing*, embracing the following elementary branches: (1) plane geometrical drawing; (2) projection; (3) perspective; and the following advanced subjects: (1) building, construction, and architectural drawing; (2) machine drawing.

II. *Free-hand Drawing*, including the representation of objects and ornament from both the flat and the round, the study of light and shade, color, and original design.

In each of these departments, some of the knowledge and practice found in the other, will be beneficial to the student. The following course will be proper for each:

First Year's Course.

1st *Part*. — (1) Free-hand outline drawing from copies and blackboard, with exercises in elementary design; (2) plane geometrical drawing, from copies and blackboard.

2nd *Part*.— (1) Model and object drawing, from copy and solid; (2) perspective drawing (for free-hand students); (3) projection (for instrumental students).

Second Year's Course.

I. *Instrumental Drawing*. — (1) Building construction, including the following subjects: joints used in carpentry, door and window framing, construction of floors, partitions, roofs, and staircases, bond in brick-work, stone-work, arches, fire-proof flooring, designs of plans, elevations, working drawings, etc.; (2) machine drawing, including such details, as bolts and nuts, plumber-blocks, screws, wheels, etc.

II. *Free-hand Drawing*.—(1) The drawing of ornament in outline, from large copies, of foliage and the human figure: shading the same from copies in pencil, crayon, and Indian ink or sepia; designing in half-tint, or several tints of one color, drawing from memory and dictation, etc.; (2) shading geometrical solids, shading from the cast and natural objects, applied design for industrial purposes and special subjects for particular branches of business.

For a description of the necessary fittings and apparatus, see Smith, *Art Education, Scholastic and Industrial* (Boston, 1873). See also Stetson, *Technical Education* (Boston, 1876); *Modern Art Education*, translated from the German of Langl (Boston, 1875); Buisson, *Rapport sur l'instruction primaire etc.* (Paris, 1875).

DRILL, a term used in education, particularly in school instruction, to denote the strict routine of exercises required either to train pupils to the ready performance of mental or physical processes, or to impress upon their memory those arbitrary associations of facts or words which are required in many subjects of study. Thus, a certain amount of drill is required in teaching the arithmetical tables, the paradigms and rules of grammar, the spelling of words, and those facts of geography that pertain to the location of places (memorizing maps). Drill requires definite exercises and regular practice in them, continued a sufficient length of time, in order to impart a kind of automatic force to the recollection. Both mind and body, by repetition, acquire fixed habitudes, by means of which thought and muscular action may be accommodated to the performance of acts which at first might have seemed impossible. This is the foundation principle of drill. (See ROTE-TEACHING.)

DRURY COLLEGE, at Springfield, Missouri, under the control of the Congregationalists, was organized and chartered in 1873. It derives its name from S. F. Drury, of Olivet, Mich., who contributed liberally toward its foundation. It is under the patronage of the American College Society of Boston. The institution comprises a collegiate department, with five courses of four years each (classical, scientific, Greek scientific, Latin scientific, and ladies' course); a preparatory department, with classical and English courses of three years each; a normal department of two years; a model school of three years; and the Missouri Conservatory of Music, chartered in 1875. Both sexes are admitted to all the departments and courses on the same terms, except that the ladies' course (equivalent to that of the best female seminaries) is designed for such young ladies as do not desire to pursue the severer college courses. The library contains 2,000 volumes; the beginning of a cabinet of mineralogy and geology has been made, and a number of specimens of natural history have been secured. The college year is divided into three terms. The regular charge for tuition per term is $15 in the college classes, $12 in the preparatory classes, $8 in the model school, and $6 in the normal department. These charges are remitted in favor of the children of ministers of any denomination who are in active service, and some aid is extended to other deserving students. In 1875—6, there were 11 instructors; the students were distributed as follows: college classes, 35; normal class, 27; classical preparatory, 75; English preparatory, 74; music, drawing, and painting, 23; model school, 31; total, deducting repetitions, 220. There were 5 graduates at the commencement of 1875. The Rev. Nathan J. Morrison, D. D., has been the president from the commencement of the institution.

DUBLIN UNIVERSITY. See IRELAND.

DULL SCHOLARS, or **Dullards,** a class of pupils found in every school and class, whose perceptions are deficient in rapidity, and whose mental powers are sluggish. Such pupils need especially the spur of encouragement, and should never be subjected to blame or derision on account of their slowness. Many teachers often greatly err in dealing with this class of pupils, applying to them such epithets as *blockhead, dolt, numbskull, simpleton, dunce,* etc. They are, moreover, sometimes neglected by the teacher, who naturally prefers to give attention to those bright, precocious pupils who need but little instruction. The best powers of the teacher, however, are displayed in developing the latent capacities of these dull scholars; and very often it has been found that those who bore the character of dullness in school have risen to great eminence in after life. The great English poet and novelist, Sir Walter Scott, and the illustrious German chemist Liebig are often mentioned as examples of this fact.

DUNCE, a term applied to a pupil who is dull, or slow in learning. The word is supposed to be a corruption of the name of Joannes Duns Scotus, a very learned man, who lived in the latter part of the thirteenth century (died in 1308). From his keen, analytical intellect and acute logic, he was styled *doctor subtilis,* the *subtle doctor.* The name of this great scholar, according to some, was applied to a dullard in derision, just as we often ironically call a stupid fellow a *Solomon,* or a bully a *Hector.* Trench, however, thinks it became a term of scorn applied to the adherents of the old school-men by the disciples of the new learning, as the latter gained ground during the middle ages. Hence, the expression, "You are a *Duns,*" was a reproach, as implying an advocate or supporter of obsolete and exploded opinions. Butler, in *Hudibras* thus puns on the word:

> " In school-divinity [he was] as able
> As he that hight Irrefragable;
> A second Thomas, or, at once
> To name them all, another Dunce."

DUPANLOUP, Félix Antoine Philippe, bishop of Orleans and the foremost Catholic writer of France, in the nineteenth century, on educational subjects, was born at St. Félix, Savoy, Jan. 3., 1802. He was ordained priest in 1825, attached, for three years, as catechist to the parish of Assumption, appointed in 1837 superior of the diocesan seminary of Paris, and, in 1849, bishop of Orleans. His chief attention has ever since been devoted to the educational interests of the Catholic Church. The *petit séminaire* of Orleans entered into a lively competition with the state schools; in his own episcopal palace, he opened a new school, and he took an active part in all the educational controversies of the time. He continued, with great energy, the defense of the " liberty of instruction," which the Catholics of France demanded in opposition to the University, and in which he had zealously interested himself even before his appointment as bishop. He disapproved of the agitation begun by Gaume (see GAUME) and others for excluding the pagan classics from Christian schools (see CLASSICS, CHRISTIAN), and was, therefore, violently attacked by the *Univers.* The controversy was, for some time, continued on both sides with considerable severity, until, at length, the Pope imposed silence upon both parties. He was consulted in the framing of the law of March 15., 1850, concerning the reorganization of public instruction; and, after the promulgation of the law, was appointed a member of the *Conseil de l'instruction publique*. He withdrew from this position in 1852. In the National Assembly which met in 1871, after the proclamation of the third republic, he was the recognized leader of the opposition against the liberal views of Jules Simon, the minister of public instruction. The Assembly appointed him president of the committee selected to examine and report on the bill in favor of compulsory primary instruction, which had been drafted by Simon; and he not only emphatically declared against the ministerial bill, but presented a counter-project in favor of the "free, religious, and gratuitous instruction of the poor." In 1875, he secured, in the National Assembly, the adoption of a bill in favor of the "freedom of superior instruction," the chief object of which was the establishment of free Catholic universities, in the subsequent organization of which he was the acknowledged leader of the bishops. (See France.) Having been elected, in 1854, a member of the French Academy, he repeatedly prevented by his influence the election of several decided opponents of Catholic doctrines. When, in 1871, Littré was admitted to the Academy in spite of his opposition, he resigned, on the ground that he was unwilling to belong to a society which admitted atheists; but Guizot and other friends prevailed upon him to withdraw his resignation. The most important educational work of Dupanloup has been published under the title *De l'Éducation* (3 vols., 1855—7). It treats of education in general, of authority and respect in education, and of superior instruction.

DURHAM, University of. See England.

DURSCH, Martin Georg, a Roman Catholic writer on education, was born at Deggingen in the kingdom of Würtemberg, Nov. 11., 1800; studied philosophy and theology at the university of Tübingen, and oriental languages at Paris, became on his return professor at the gymnasium of Ehingen, and, in 1850, pastor and dean at Rottweil. His work on pedagogics or Christian education (*Pädagogik oder Wissenschaft der christlichen Erziehung*, 1851) is regarded as one of the best on this subject from the Catholic point of view. He advocates the co-operation of church and state in the management of the public school, and asserts that, without this co-operation, the aim of the public school to improve and purify human society can never be attained.

DURUY, Victor, a French historian, author, and educationist, born in 1811. He was professor of history at Reims, and afterwards at Paris, in the *Lycée Napoléon*. In 1853, he received the degree of Doctor of Letters. He successively served as inspector of the Academy of Paris, inspector general of secondary instruction, and minister of public instruction (1863). In the latter position, which he filled till 1869, he attempted many innovations which were much opposed; he effected, however, some important reforms. His chief historical publications are *Histoire des Grecs*, 2 vols., *Histoire des Romains*, 4 vols., *Introduction générale à l'histoire de France*, 1 vol., *Cours d'histoire*, 7 vols., and *Histoire de France*, 3 vols. These works have been very popular, and have attained an extensive circulation. M. Duruy has also published valuable reports on the progress of literature and science as shown in the *Exposition Universelle* of 1867.

DWIGHT, Francis, noted for his efforts in behalf of popular education in the state of New York, and as the founder and editor of the *District School Journal* of that state, was born in Springfield, Mass., March 14., 1808, and died in Albany, N. Y., Dec. 15., 1845. For several years he acted as county superintendent of schools for the city and county of Albany, and was successively member of the school board of Albany, and of the executive committee for the care and government of the normal school in that city—the first in the state. The *District School Journal* was commenced in 1840, and edited by him till his death. This journal was aided by the patronage of the state, and was supplied, at the expense of the common-school fund, to every school district. Its tone and influence were highly commended by the distinguished educators of the time. It survived him, however, only a few years. — See Barnard, *American Teachers and Educators*.

DWIGHT, Timothy, a celebrated American theologian and scholar, was born in Northampton, Mass., May 14., 1752, and died in New Haven, Ct., Jan. 11., 1817. His mother was the daughter of Jonathan Edwards. After graduating at Yale College, in 1769, he taught a grammar school in New Haven for two years, and, during the next six years, was a tutor in Yale College. During a part of the Revolutionary war, he served as chaplain in the army, distinguishing himself by the patriotic fervor of his addresses, and by the stirring songs which he composed. He, subsequently, performed the duties of pastor of the Congregational church and principal of an academy, in Greenfield, Ct. In 1795, he succeeded Dr. Stiles in the presidency of Yale College, which position he held till his death. He was a teacher of great ability, an impressive pulpit orator, and an excellent divine. His presence was commanding, and his manners affable and genial. His writings were numerous, but confined to the departments of theology and general literature. One who had been connected with him as a student in Yale College, thus bears testimony to his character as a teacher: "After the lapse of forty years, and after much opportunity of associating with many eminent instructors, President Dwight is ever present to my mind as the *Great Model Teacher*."—See Denison Olmsted, *Timothy Dwight, as a Teacher*, in Barnard's *American Teachers and Educators*.

EAR, Cultivation of the. Recent physiological researches appear to leave but little reason to doubt that, at birth and for months afterward, the organs of the special senses exist in only a rudimentary form, and that they owe their gradual development entirely to the external influences exerted upon them by nature and society. It is, therefore, not only probable, but experimentally demonstrable, that the education of the senses is more or less efficient according to the time at which it begins after birth. In the light of modern experience, it is considered by some extremely doubtful whether there is really any case of actual congenital blindness or deafness. The tendency to these defects, doubtless, often exists as an hereditary imperfection, but is scarcely ever of such a nature as to be incurable, if discovered and treated properly soon after birth. Hence, except when an organic malformation exists, it follows that a systematic and judicious training of the senses, from the earliest infancy, may remedy most, if not all, cases of such defects as color-blindness, weakness of sight and hearing, etc. Such indeed is the conclusion derived from the experience gained in infant asylums, kindergartens, and intelligent families. This is an important fact, since it serves to correct the notion, so generally entertained, that good speakers and singers must be born such, and that there are but few persons thus naturally endowed. There is, without doubt, considerable diversity in the sensuous endowments of different individuals; but, at the same time, it is impossible to fix a limit to the improvement of which every organ of sense is susceptible by continuous and proper education, and particularly by a cultivation carried on through several successive generations. As regards the ear, this may be considered as historically established; since, but three centuries ago, there were but an exceptional few persons who showed an ability to appreciate, and a still smaller number who were able to reproduce, musical melody and harmony. Of all the ancient nations, the Greeks alone seem to have been able to enjoy the diatonic scale (but not the chromatic), and to give it expression in their music, other nations never having any other than the scale of five notes (barbaric scale). The progress of musical art among modern civilized nations and particularly the diffusion of musical taste among the people are striking illustrations of ear culture, since this progress could not be effected without an organic as well as an esthetic improvement.

The sense of hearing is the earliest to be developed in infancy, and, at the approach of death, seems to be the last to be extinguished; it is also the last to be overcome by sleep, and the first to be aroused on awakening. In reaching objects at a distance, its power is next to that of sight. In the earliest stages of intellectual development, the sense of hearing performs a most important office, since language, the most efficient means of all education, depends upon its exercise. Moral education, no doubt, also begins with the genial accents of the maternal voice, both in speech and song, as heard by the infant; so that even the lullabies which soothe it to slumber constitute an agency in its development. While, therefore, loud and explosive noises may injure the physical organization of the ear of the child, harsh and angry tones may affect injuriously the development of its affections and sentiments. All disagreeable sensuous impressions are deeper and more durable than those of an opposite character; and, hence, when often repeated, they tend to destroy the capacity of the ear for the appreciation of beautiful sounds. Otherwise, variety of sound is not detrimental to the infant's ear, but on the contrary, beneficial, especially when the source of each sound is, at the same time, presented to the sight, or touch, or both these senses. From the time the infant begins to understand simple language,—usually after the fourth month, especially if the words are accompanied with mimicry or gesticulation, care should be taken to articulate distinctly. In families in which there is a negligence in this respect, it will be found that the children either never, or with very great difficulty, acquire a distinct articulation. It is a great error, quite common in some families and communities, to repress the natural vociferations of children, and to insist on the constant use of low tones in speech. Nature dictates a great deal of crying, shouting, etc., in order that the lungs and vocal organs may be fully developed; but, of course, all excess should be restrained, since the habit of yelling and shouting in the open air will not only injure the delicate organs of the voice, but will have a bad effect upon the moral development of the child, besides incapacitating him for the perception and appreciation of those delicate distinctions of sound upon which musical harmony and melody depend. To what an extent this nice perception and discrimination of sound may be cultivated, appears from the fact that, in good kindergartens, a child will learn to distinguish blindfolded the voice of any one of a hundred comrades, to tell by what means any one of a hundred different noises is produced, and to estimate with tolerable accuracy the distance of the source of any well-known sound. Very young children may also, by suitable exercises, readily acquire the ability to distinguish the intervals of musical notes, and their position in the scale. By similar kindergarten exercises, even cases of constitutional difficulty in hearing may be considerably alleviated. Thus such a child may be shown how, by closing the mouth and nostrils, the air may be forced into the Eustachian tubes, until the well-known explosive sound of each tympanum follows. After every such exertion, the hearing will be found to become somewhat better, until, by frequent repetition, its improvement will be quite decided; because the fine blood-vessels of the organ, in which the circulation had become stagnant, are rendered active; provided, of course, there is no malformation or incurable physical defect in the organ itself. (See Senses, Education of.)

EARLHAM COLLEGE, at Richmond, Ind., is controlled by a board of managers appointed by the Indiana Yearly Meeting of Friends (orthodox). It was chartered in 1857; but a boarding-school for instruction in the higher branches had been in operation in the same building for several years previous. The college is supported by the income from an endowment of $55,000, by tuition, and by the proceeds of a farm. There is a classical and a scientific course, each of four years. The preparatory school has a course of two years. Students may pursue selected studies at the discretion of the faculty, but no degree is given except on the completion of one or the other of the regular courses. The degrees are, A. B. for the classical and B. S. for the scientific course. Graduates may receive the second degree (A. M. or M. S. according to the previous course) either on continuing one year at the college in the satisfactory prosecution of post-graduate studies, or, in regular course, at the end of three years on passing a successful examination in some selected studies, or on the presentation of a satisfactory thesis. The college has libraries containing over 4,000 volumes; an observatory supplied with an equatorial telescope, a transit instrument, and an astronomical clock; and a museum of zoology, comparative anatomy, geology, archæology, etc. There are from ten to twelve instructors, including six professors and a principal of the preparatory department. The number of students at present (1876) ranges from 220 to 230 per year, about one-third of whom are college students. The number of graduates, in 1875, was 79. The first president, Prof. Barnabas C. Hobbes, was appointed in 1865; he held the office two years and was succeeded by the present incumbent, Joseph Moore, A. M.

EAST TENNESSEE UNIVERSITY and State Industrial College, at Knoxville, Tenn., non-sectarian, was chartered in 1807. It received a grant of land from the United States through the state legislature, from which about $40,000 was derived; and a further endowment was obtained from the property of Blount College, which was merged in it on condition of its establishment at Knoxville. It was suspended during the civil war, and the college property was occupied by the United States army, and greatly damaged. Exercises were resumed, in 1866, in the Asylum for the Deaf and Dumb. In 1869, the institution received the Congressional land grant to the state for the establishment of an agricultural and mechanical college, and the State Industrial College was organized. New college buildings have been erected, which stand on an eminence near the city. The college farm of 260 acres is about a mile from the buildings. The libraries contain about 4,000 volumes. The cabinets of geology, mineralogy, and zoölogy have been recently commenced, and are constantly receiving accessions. A chemical laboratory has been established. The value of the grounds, buildings, and apparatus is $150,000; the amount of productive funds, $396,000. It has a preparatory and a collegiate department. The collegiate studies extend over a period of four academic years, of ten months each, and comprise three distinct courses, as follows: (1) The agricultural course, in which prominence is given to the sciences pertaining to agriculture; (2) The mechanical course, in which the principal studies are those which relate to the mechanic arts; (3) The classical course, in which the Latin and Greek languages are taught. Students completing, with credit, the classical course, receive the degree of Bachelor of Arts; those completing the agricultural or mechanical course, that of Bachelor of Science. The students are organized into a battalion; and military drill and inspections, under the direction of the professor of military tactics, take place daily. The whole college is under military discipline. All able-bodied students must perform a small amount of labor; but this is principally required of the freshman and sophomore classes. Those who wish additional labor, are, to a limited extent, furnished with work, for which they are remunerated. The cost of tuition is $36 a year in the college, and $30 in the preparatory department. Free tuition is given to students nominated by members of the state legislature, each senator having the right to nominate two, and each representative three. Free tuition is also given to young men who intend to prepare for the ministry, and who bring a certificate to that effect from some church organization. In 1874—5, there were 18 instructors, and 101 collegiate and 214 preparatory students. The Rev. Thomas William Humes, S. T. D., is (1876) the president.

EAST TENNESSEE WESLEYAN UNIVERSITY, at Athens, Tenn., under the control of the Methodist Episcopal Church, was chartered, in the winter of 1866—7, as the East Tennessee Wesleyan College. The name was changed at the next session of the legislature. It was opened in September, 1867. The main college building is a substantial brick structure, 70 by 50 feet, and three stories high. The libraries contain about 1,500 volumes. There is an academic, a preparatory, and a collegiate department, the last having a classical and a scientific course. There are two terms in the year, and the cost of tuition varies from $6 to $22 per term, according to the department. Deductions are made in favor of ministers of the Methodist Episcopal Church. In 1874—5, there were 7 instructors, 16 collegiate students, 35 preparatory, 30 academic, and 12 music scholars, making a total, deducting repetitions, of 86; the number of *alumni*, up to that time, was 27. The Rev. John F. Spence, A. M., is (1876) the president.

ECONOMY, School. See School Economy.

ECUADOR, a republic of South America, having an area of 248,400 sq. m., and a population estimated, in 1875, at 1,850,000. Of these, 55 per cent were whites; 42 per cent Indians; the remainder, negroes and half-breeds. The inhabitants speak the Spanish language and belong to the Roman Catholic Church, the form of worship of which is the only one tolerated in public. After the conquest of the empire of the Incas, the kingdom of Quito was made a presidency of the viceroyalty of Peru. It remained under Spanish rule up to 1822, when it became a part of the republic of Colombia; and, in 1831, became an independent republic under the name of Ecuador. Since then, it has been the scene of numerous revolutions and wars with the neighboring republics. The schools of all grades have been and still are under the control of the church, which, in this republic, has generally wielded a greater power than in any other part of South America. It was especially the aim of the conservative president Moreno (died 1875) to place the entire department of instruction under the immediate direction of the church. In 1864, it was resolved to erect a number of new schools, to be conducted by the Brothers of Christian Doctrine. The district councilors were empowered to raise in advance a part of the taxes for the support of these schools. At the same time, an agreement was entered into between the government and the Society of Jesus, according to which the latter assumed the direction of a number of *colegios*. How little education is valued, may be seen from the fact that the expenditure for public education, according to the annual budget, amounts to only about 20,000 pesos (1 peso=$0.96.5).

Primary Instruction.—The schools are attended almost exclusively by the whites, the half-breeds, and the mulattoes; while the Indians, who compose the laboring classes in the cities, do not enjoy the advantage of any education at all. The number of public schools, in 1873, was 244, of private schools, 176; and the number of schools supported by corporations was 11, making the total number of primary schools 431. The number of pupils in the public schools was 17,661, the number in private schools 3,966, and in schools supported by corporations 837, making the total number of pupils 22,464. The course of instruction in the public schools comprises reading, writing, arithmetic, and religion.

Secondary, Superior, and Special Instruction.—There were, in 1873, six colleges (*colegios nacionales*) with 59 professors and 757 students, and one female college with 4 professors and 153 students. The University of Quito comprises four *colegios*, the *Colegio de San Gregorio*, founded in 1586 by the Society of Jesus, and invested with the privileges of Salamanca in 1621; the *Colegio de Santo Tomas de Aquino*, belonging to the Dominicans; the *Colegio Mayor* with which a seminary is connected, and the *Colegio de San Fernando*. The revenue of the university amounts to from 4,000 to 5,000 pesos, and the salaries of the professors to 3,950 pesos. In the *colegios*, the course of study embraces Latin, and sometimes Greek, in addition to the branches taught in the primary schools. The university course comprises the Spanish language and literature, Latin, Greek, law, medicine, etc. *Special instruction* is imparted in the following schools: schools of art and industry with 22 professors; a polytechnic school, with 13 professors and 59 students; a military academy, with 5 professors and 23 cadets; seven seminaries supported by the clergy, with 47 professors und 227 students; an academy of fine arts, with 2 professors and 22 students, and a conservatory of music, with 8 professors and 39 students. In 1872, a prospectus was issued for a school of obstetrics, and also for one of sculpture, to be opened in Quito, under the direction of European professors. An academy of arts and sciences was also to be opened in Quito, and the advantages of the Guayaquil Normal School were to be extended to Indian children.—See SCHMID, *Encyclopädie*, vol. IX., art. *Südamerika*; WAPPÆUS, *Handbuch der Geographie und Statistik*, vol. I; *Report of U. S. Commissioner of Education* for 1873.

EDGEWORTH, Maria, a gifted English authoress, noted for her educational writings, was born at Hare Hatch, near Reading, England, in 1767, and died at Edgeworthstown, Ireland, in 1849. She was the daughter of Richard Lovell Edgeworth, who was quite celebrated both as an inventor and an author, and, to some extent, also as an educationist. He was the author, jointly with his daughter, of *Practical Education* (1798), and published *Essays on Professional Education* (1809), and a continuation of *Early Lessons* (1815), published originally by his daughter in 1810. In 1822, Maria Edgeworth published *Rosamond*, a sequel to *Early Lessons*, which was followed by *Harry and Lucy*, the *Parents' Assistant* (a series of juvenile tales), and *Frank*; subsequently also *Orlandino*, which appeared in *Chambers's Library for Young People*. It was, however, as a writer of fiction that Miss Edgeworth gained her greatest fame. Her novels acquired a high degree of popularity, which, to a considerable extent, they still retain; and they were widely circulated both in England and in the United States. They were greatly admired by her illustrious contemporaries Scott, Macaulay, and Jeffrey. The latter said, "It is impossible to read ten pages in any of her writings, without feeling, that not only as a whole, but that, in every part, they were intended to do good." "She is the author," said Edward Everett, "of works never to be forgotten; of works which can never lose their standard value as *English Classics*." In 1820, she completed a *Memoir* of her father (commenced by him), who died in 1817. There are several editions of her works, which still continue to be reprinted.

EDINBURGH, University of. See SCOTLAND.

EDUCATION (Lat. *educatio*), a general and comprehensive term, including in its signification every thing that pertains to the bringing up of children, and the operation of influences and agencies designed to stimulate and direct the development of the faculties of youth by training and instruction, and thus to control the formation of their character. Hence, education has been divided into several departments, according to the class of faculties to the development and improvement of which it is directed, including (1) *Physical Education* (q. v.), or the education of the bodily powers; (2) *Intellectual Education* (q. v.), that of the mind or intellect; (3) *Moral Education* (q. v.),—of the propensities, sentiments, will, and conscience; (4) *Esthetic Education*,—of the taste, musical, artistic, or literary, that is, comprehending the sphere of the imagination (see Esthetic Culture); and (5) *Religious* or *Spiritual Education*, -- of the religious sentiments, the spiritual instincts; that is, those which concern only the soul as a spiritual and immortal essence, and its relations to the Creator, the Infinite Spirit. (See Religious Education.)

Education is also distinguished into *home* or *domestic education* (q. v.), and *public* or *common-school education* (see Public Schools), or, considered as a means for the general enlightenment of the people, *popular education;* also into *private education*, that is, supported by private funds, and *national education*,—provided for by the state. (See National Education.)

School education, generally called *instruction*, on account of the more limited character of its scope and the sphere of its operations, is distinguished, according to its grade, into (1) *primary instruction*, that is, the instruction given in elementary schools (such as the common schools,—the primary schools of cities representing only a lower subdivision of primary instruction); (2) *secondary instruction*, — as given in academies, high schools (middle schools); (3) *superior instruction*,—as given in colleges and universities; (4) *special instruction*,—as of the blind, the deaf and dumb, and the imbecile; (5) *professional and technical instruction*,—as in art schools, law schools, medical schools, military, naval or nautical schools, theological seminaries, schools of architecture, etc., for information in regard to which see the respective titles.

Education is to be carefully distinguished from instruction, the latter being only a subordinate part of the great scheme of controlling and guiding the development of a human being. To this department of education the term *didactics* (from the Greek word *διδάσκειν, to teach*) is often applied. (See Didactics and Instruction.) Instruction is addressed to the intellect or understanding; while education comprehends the whole nature of man and the various agencies by means of which, in its formative state, it may be affected. Its primary object is to form the character either by stimulating its development in the normal direction, or correcting tendencies to morbid growth. In respect to the scientific principles by which its practical operations should be guided, education is a science; in relation to the proper mode of performing those operations so as to render them as effective as possible, it is an art. The science of education is a very complex one, inasmuch as its principles must be drawn from many different departments of science; superadded to which, as its own peculiar sphere of investigation, there is the great body of truths which concern the growth and development of mind and body, and which especially constitute the *theory of education*, or *pedagogics*, as sometimes called. This article will embrace only the general consideration of (I) the history of education, and (II) the theory of education, with a reference to sub-titles for fuller information in regard to subordinate topics.

I. *History of Education*.—The history of education is the history of the institutions, principles, and methods by means of which children and youth of both sexes have been educated, from the earliest period of historic times to the present day. It embraces within its scope an account of the peculiar character which education has assumed among the several nations of the globe, of the rise and development of the different methods of instruction, of the systems and labors of prominent educators, of the divisions and classes of schools, and of the rival and frequently conflicting claims of the family, the church, and the state to a share in the regulation of public instruction. Each of these subjects is treated of in this work under special titles: and the object of this general article can, therefore, only be to present a brief general view, in outline, of the subject, so as to show more clearly the relation of its several departments and topics.

The earliest schools which have any claim to a place in a history of education are met with in Egypt, China, India, and Persia. In all these countries, it was the aim of the instructor to train the young so that they might become homogeneous members of the community to which they belonged, the institutions of which were to be preserved and continued by them unchanged. The claims of individuality were, at that early period, unknown; and the principle of blind and slavish submission to the constituted authorities was the basis of all education. There are, however, some marked points of difference. In China, the distinctive features of education characterize it as family education, in India as caste education, in Persia as state education, and in Egypt as priestly education. In China, every child is reared in absolute obedience to the head of the family, and every family submits as a child to the common father of all, the Emperor. The excessive veneration of ancestry makes the character of the people essentially stationary, and education assumes pre-eminently the character of mechanical training. In India, every child belongs by his birth to one particular caste; and the foremost aim of the instruction given is to teach him the rights and duties of the caste. The leading principle of Indian education is habit. In Persia, every kind of power and authority centers in the king; the children belong more to the state than to their parents, and the germs of a strictly national education may, therefore, be found in the institutions of that country. In Egypt, the priest is the chief representative of education and the only teacher. (See China, Egypt, India, and Persia.)

The classic nations of the ancient world, Greece and Rome, began a new period in the history of education. While the oriental child was taught to become a docile member of the family, the caste, the state, or the religion, Greece and Rome conceived the idea of individual education; man was not merely expected to fit himself for the place which the family, the caste, the state, or religion assigned to him, but he was to choose his own vocation, and by aspiring to the highest place of honor in political life, in art, or in science, to advance beyond his ancestors. Mechanical training failed to satisfy those who interested themselves in the cause of education; the first theories of education were developed, and the harmonious development of the body and the mind was held up to the young as the worthiest aim of their youthful ambition. Lycurgus and Solon as lawgivers, Pythagoras and Socrates as practical educators, and Plato and Aristotle as writers on education, propounded and brought into circulation a number of new ideas, with which not only did the older nations of the ancient world have nothing to compare, but which have remained among the most potent agencies in the progressive education of mankind. A beautiful individuality was, to the Greek, the aim of life, and the ideal of education was expressed by the word καλοκαγαϑία, the beautiful and the good. The Spartan system of education constituted, to a considerable degree, an exception to this general characteristic of Greek education. The Roman's attention, from his early childhood, was directed to the affairs of a commonwealth which was constantly engaged in war, and those who reared him naturally designed to make him a practical man. The development of a practical individuality became the aim of Roman education. Less time was found for, and less interest felt in, the study of science and art; but there was a notable progress in the appreciation of home education, involving a higher regard for marriage and for a more dignified and freer position of woman in society. In every family, the mother was to begin and the father to continue the work of education, which came to be looked upon as a part of parental duty. Both parents co-operated in nursing, in the minds of their children, the feeling of patriotism; and a part of the education which the young Roman received under the parental roof was the desire to become a useful, honest, and illustrious citizen of the commonwealth. Under these influences, the will was more developed than either the emotional nature or the intellect. The only sciences which interested the Romans were almost exclusively those of a strongly utilitarian character,—rhetoric, Roman history, and military science; since every noble and talented youth aspired to become a leading politician or a great general. The characteristic virtue of the ancient Romans, before the decline of the Republic, was stern and inflexible integrity in political life; but all their intellectual and moral aspirations were circumscribed by the narrow horizon of their own nationality, and a due regard for those outside of it appears to have been unknown to them. When an acquaintance with the institutions of conquered Greece revealed to the Romans a progress in art, science, and literature, which they as yet had not even conceived, and thus awakened a thirst for higher literary culture, the political and social system of the republic had already entered upon the period of its decline. Higher instruction, often imparted by despised slaves, was an inadequate compensation for the decline of home education; and scientific and literary culture proved utterly unable to arrest the flood of corruption which finally overwhelmed the free institutions of Rome. The lines of Horace, so often quoted, have thus an impressive significance:

> Græcia capta ferum victorem cepit, et artes
> Intulit agresti Latio.

Under the empire, the old landmarks of national education were entirely swept away. Greek tutors, and Greek high schools, at Athens and Constantinople, were expected to supply the highest instruction; but the enervated Roman was no longer able to grasp the ideal of a universal higher education, and the Roman Empire of the West was destroyed by the barbarians without having developed any systems or forms of education. As Roman education, from the foundation of the city to the downfall of the empire, was of a predominantly utilitarian character, Rome never produced any writers on education like Aristotle and Plato; yet the works of Cicero, and especially of Seneca and Quintilian, contain many suggestions of great practical value.

A peculiar position is occupied by the Hebrews, the only theocratic people of antiquity. Their children were to be educated, not for the family or caste, not for the state or for personal distinction in art and literature, but to be the obedient servants of the God of Israel. As Jehovah was represented to the people as their sovereign, so he was their only teacher. Education was a corollary of religion. The head of a family was both its teacher and priest, and gave to the children a religious instruction; reading and writing were learned only by the children of the wealthy. The first organized schools were the schools of the prophets for training expounders of the law of Jehovah; after the exile, the rabbis organized a number of schools, to which children from their 5th year could be sent. The instruction was for a long time entirely oral, and at first also limited to the tenets of the Jewish religion; but gradually the course of instruction was enlarged, and, during the middle ages, many Jewish schools obtained a high reputation for the number of scholars whom they educated.

The advent of Christianity was a great turning-point in the history of education, no less than in the general history of mankind. For a considerable length of time this was far from being recognized. To the educated and wealthy Romans, especially to those holding a high rank in scholarship and literature, the Christians appeared as a humble, insignificant, and despised sect. The energies of the Christians themselves were so greatly absorbed in the effort to live up to the requirements of their religion, and to develop the constitution of their church, that but little attention seems to have been devoted to the cause of education. They had no literary institutions of their own, and, consequently, their children were often sent to pagan schools for secular instruction. The first Christian schools were founded to instruct the catechumens in the doctrines of Christianity, and to enable them to vindicate their religion from the attacks of pagan philosophers. The most famous of these schools, that of Alexandria (see ALEXANDRIAN SCHOOL), gradually developed into the first school of Christian theology. Its great teachers, especially Clement and Origen, not only freed Christianity from the charge, until then very common, of being the faith of the ignorant and illiterate, but, by conceiving the idea of demonstrating the agreement of Christian doctrines with Platonic philosophy, attempted to revive the educational ideas of the Greeks, the most advanced in ante-Christian times, and to resume the work of educational development where the great masters of ancient Greece had left off. This attempt, however, failed in consequence of the passionate opposition made to it by another school of Christian theologians, who saw in the world outside of the Christian revelation nothing but darkness and sin, and did not believe that any good could be derived from the study of pagan literature. Tertullian rejected any connection between Christianity and philosophy with the harsh remark, "What have Athens and Jerusalem, the Academy and the Church, in common?" Similar views were expressed by Irenæus, Cyprian, and Arnobius, while other writers, especially at Rome, endeavored to compromise between the Alexandrians and their opponents. When, three hundred years after its rise, Christianity supplanted paganism as the official religion of Rome, the detestation of pagan learning was sufficiently predominant in the Christian Church to cause the decline, and, subsequently, in the fifth century, the extinction, of the Alexandrian school. With it the study of the literature of ancient Greece ceased, and the treasures which are contained in the educational works of Plato and Aristotle, were for a long time hidden. The only schools to be met with at that time in the Christian world, were several schools of theology, like those of Antioch, Edessa, and Nisibis; and even these declined, simultaneously with or soon after the closing of the school of Alexandria. The mass of the Christian people derived its entire education from the family and the church. Upon this field, however, Christianity had produced wonderful results of regeneration. While pagan society was irresistibly collapsing, from vice and corruption, the Christian congregations excited the admiration of the world by the strength of their faith and the depth of their religious feeling. The organization of Christian schools other than those of a theological character is chiefly due to the monastic orders. Both in the east and in the west provision was made for instructing not only the candidates for monastic life, but also children who were sent there by their parents. In the East, the attention of the monks was, however, so completely absorbed in subtle metaphysical questions and controversies, that little was accomplished deserving a mention in the history of education. In the west, Benedict and his followers gave to monastic education a more practical basis, and combined agricultural and mechanical occupations with the study of theology. The importance of these convent schools (q.v.) greatly increased when the barbaric tribes overpowered western Europe, and rudely destroyed the last remnants of Roman civilization. The convents then became almost the only refuge of learning, and were thus enabled to extend their educational labors. Their success and the growing demand for instruction called into life the cathedral and collegiate schools (q. v.), which, in the main, pursued the same course of instruction. By far the most celebrated among all the convents of Europe were those of Ireland and England, which not only sent the greatest number of missionaries for the conversion of the pagan portions of Europe, but also educated the best teachers. The most vigorous impulses given to the progress of education in that period did not, however, proceed from any monk or convent, but from the great monarchs in the ninth century, Charlemagne (q. v.) and Alfred (q. v.), who by wise laws, greatly increased the number of schools and improved the course of studies, which were divided into the *trivium* and *quadrivium*. Charlemagne was the first who conceived the idea of organizing instruction for the whole people; but his efforts in this direction were not successful, as, after his death, only few men could be found who were both willing and able to carry on the work of the great emperor. The people of the towns and rural districts did not appreciate the value of education, and a large portion of the clergy looked with disfavor at the attempt to cultivate in schools the language of the people at the expense of the Latin, the universal language of the church. Of the emperors and kings of the middle ages, not one resumed the educational ideas of Charlemagne; their energies being chiefly used, and to a large extent wasted, in their conflicts with the church and with the nobility. Since the authority of the church as the infallible teacher of religious truth was recognized in all Christian countries, it was to be expected that science and education would be, to a large extent, influenced and controlled by the church. Theology, actuated by the supreme desire to defend the rule of the church, developed into scholasticism (q. v.), which reached its greatest prosperity in the twelfth and thirteenth centuries. The methods of instruction pursued in the ecclesiastical schools were mechanical, the pupils endeavoring to reproduce, in literal recitations, the explanations and lectures of their teachers. School discipline was not only severe, but often cruel, and corporal punishment was generally approved, and frequently applied. The first departures from the educational methods of the church schools are met with in the education of young nobles, and in the establishment of town schools. In neither case was there any formal denial of the authority of the church, but very great attention was given to certain features of education which not only found no place in the church schools, but were frequently censured by the representatives of those schools as dangerous innovations. Thus, the attention given to gymnastic exercises in the education of young nobles, and the worshipful attention shown to noble women, gave to the aristocracy of the middle ages a training quite different from what it would have received in the church schools. The establishment of town or burgher schools, which assumed large dimensions after the twelfth century, made the acquisition of such knowledge as was most needed by the business man and mechanic, especially reading, writing, and arithmetic, the leading object of instruction. They were sometimes called writing-schools, as they aimed at fitting their pupils for writing letters and business compositions. These schools not only served to develop the idea of secular instruction in the place of merely ecclesiastical education, but, when town magistrates were the patrons of the schools, led to the appointment of lay teachers, and, gradually, caused teaching to be regarded as a special profession. The beginning of this profession was sufficiently humble. Even at the close of the middle ages, special school-houses could be found in only a few towns. Instruction was generally given in some building used for ecclesiastical or municipal purposes, or in hired rooms. When magistrates had the control of a school, they engaged a school-master, generally for the term of one year. The school-master chose his own assistants, and, if his contract was not renewed, master and assistant traveled from town to town, until they found a new engagement. They were sometimes accompanied by crowds of boys and youths (see BACCHANTS), whose vagrant habits were, however, by no means calculated to increase the reputation of school education.—The greatest among the educational achievements of the Christian world, during the middle ages, was the establishment of the universities, in which every department of science was to be developed to its highest perfection. The plan of these institutions, which were to be the centers of the literary labors of the entire Christian world, and in which, therefore, the progress made in any one science was to benefit all, was in itself an immense progress. The development of the universities was greatly promoted by the revival of classical studies (q. v.), which began in Italy in the 14th century, and by the discovery of the art of printing in the 15th century, which greatly facilitated a general diffusion of every kind of knowledge. The foremost representatives of this new period of intellectual activity were Erasmus, Reuchlin, and Melanchthon. A striking feature in the educational history of Christian Europe, from the rise of Christianity to the end of the middle ages, is the controlling influence of a universal church, with one visible head, the Pope, and one literary language, the Latin. In ancient Egypt, China, India, Persia, Greece, Rome, and among the Jews, the aim of education had always a strictly national bearing, and the same word was generally used to denote the ideas of foreign and hostile. Christianity, which became the religion of the Roman state at a time when the great empire had begun to shake to its very foundation, soon witnessed its destruction and the rise of a number of independent states, and regarded it as a divine mission to unite these conflicting nations in a common submission to the supreme authority of the one true religion. Thus not only was secular education made subordinate to moral and religious education, but the submission of so many nations to one spiritual authority tended to develop ideas of universal rather than national education. The Eastern Empire had no part in the educational progress of western Europe, and was in a completely petrified and exhausted condition when it was destroyed, in the fifteenth century, by the Mohammedan Turks. Mohammedanism, at that time, had been in existence for about 800 years. It had become the predominant religion in a large portion of Asia and Africa, and, for several centuries, had ruled in Spain. Its influence upon the progress of education, at one time, appeared to be even more favorable than that of Christianity; and the Mohammedan high schools of Spain not only attracted a large number of students from Christian countries, but in many sciences, as mathematics, philosophy, and natural history, became the teachers of all Europe. In the twelfth century, these schools began to decline; and, from that time to the present, education in the entire Mohammedan world has been in a most depressed condition.

At the close of the fifteenth and the beginning of the sixteenth century, a series of remarkable events indicated the entrance of mankind into a new period of its history. One of special importance in regard to the progress of education was the overthrow of the Catholic Church in a large portion of Europe. As Luther, Zwingli, Calvin, and other leaders of the religious movement appealed from the judgment of the Church which condemned them, to the Bible, it was their natural desire that every Christian family should be sufficiently instructed to be able to read the Bible. The governments of several Protestant states issued laws which were intended, after the example of Charlemagne, to bring the entire population under educational influences. In this way, education became more widely diffused than it had ever been in the middle ages; and it remained, henceforth, to a higher degree than before, the subject of serious study for many legislators; but there was no substantial change in the methods of instruction, and the subserviency of secular to theological education remained as complete as before. The desire to preserve the Catholic Church from further defection, and to recover the ground already lost, led to the establishment of the order of the Jesuits, who tried, for this purpose, to obtain a control of the education of the higher classes. The schools of the Jesuits (q. v.) attained a great celebrity, a large attendance, and the admiration of many of the most eminent Protestants. In consequence of the close connection between schools of every description and the church, all the great religious movements were reflected in education. Thus, when the German Pietists charged the Protestant Church of their time with laying too great stress on a rigid orthodoxy, and with undervaluing the emotional element of religion, the schools influenced by them were so shaped as to aim more at the education of practical than orthodox Christians. Germany is indebted to these Pietists for one of its greatest philanthropists and most practical educators, A. H. Francke (q. v.), whose fame in the history of education rests more on the excellent institutions which were founded by him, than on any new theory or literary work on education.

A radical reform in education had, in the meantime, been introduced by Comenius (q. v.), a bishop of the Bohemian Brethren and one of the greatest educators of all time. Influenced by the inductive method of Bacon (q. v.), and the works of Ratich (q. v.) on the necessity and importance of an independent art of teaching, Comenius conceived the idea of a harmonious development of all the faculties of man, and proposed a grand system of popular education which is still admired by all educators as a work of lasting value. The views of Comenius on vernacular schools, on the return from dead books to the live book of nature, on intuitional teaching and the value of analytico-synthetic methods met with general approbation and led to immediate reforms. The movement begun by Comenius was greatly strengthened by the writings of John Locke (q. v.), who applied Bacon's inductive method to the study of the human mind and became the founder of empirical psychology. Locke specially exceeded former writers in recognizing the importance of physical education; his ideas in regard to this subject have exercised a marked influence on modern school legislation. The new principles thus developed were welcomed by the powerful opposition which, in the seventeenth century, arose in the literary world against the influence of both orthodox Protestantism and the Catholic Church upon society, and which had its chief representatives in the French Free-Thinkers, the English Deists, and the German Rationalists. It became the general tendency of the age to look upon education as one of the most important departments of state administration, and, in most of the states, ministries of education, school boards, and school commissions were appointed. In Germany and a number of other countries, compulsory education was introduced. The chief difference among the leading educators concerned the question whether instruction should chiefly aim at imparting positive and useful knowledge, or at exercising and training the mental faculties. The advocates of the latter principle, who were called the Humanists, attributed very great educational importance to the study of the classical languages; while those of the former, called Realists, from their utilitarian point of view, thought more of natural sciences, modern languages, geography, and history. Among the writers on education in the eighteenth century, none became so famous as Rousseau, an enthusiastic idealist who looked upon the entire civilization of his age as an aberration from nature, and proposed to erect upon its ruins an entirely new society. The means by which he desired to effect this change was a radical reform in the system of public education. Neither he nor any of his admirers was able to carry his radical theories into practice; but many of his ideas, especially on physical education and the cultivation of the intellect, are now accepted as correct by all educators. He is regarded as the father of the anthropological principle in education which insists that the educational functions of a teacher should begin with his study of the individual nature of his pupils. Basedow (q. v.) and other Philanthropists (see Philanthropin), attempted to establish model boarding-schools on the basis of the ideas of Comenius, Locke, and Rousseau. The great hopes which they raised were never realized; but many of their pupils have risen to considerable eminence.

The most famous and influential of modern educators was Pestalozzi. The eminent position which he occupies in the history of education is not so much due to a perfect method of instruction, to a superior talent of organization and management, or to the foundation of great educational institutions, for in all these respects Pestalozzi has been excelled by other educators; but he has secured the admiration of all time by his fervid enthusiasm in the cause of education. He gave a greater impulse to the improvement of popular education than any of his predecessors; and it was his special merit to have called attention to the ethical and psychological foundation of education. The followers of Pestalozzi called into existence a number of practical reforms, the most important of which is the kindergarten (q. v.), founded by Froebel (q. v.), a system for the education of young children before their admission to the primary school.

Many of the eminent philosophers of the eighteenth and nineteenth centuries have discussed the great problems of pedagogy; and conflicting as their views may be on many important questions, the principle that education should be a natural and harmonious development of independent individualities is generally recognized. Of special interest for educators are the systems of Herbart, Beneke, and Herbert Spencer. Herbart (q. v.) rejected the traditional view of a number of different powers constituting the human soul, which on the contrary is regarded by him as a simple entity and as not subject to any change in its quality. Beneke (q. v.) proposed a system of education wholly based on psychology, to which he attributed the character of a wholly empirical science. Herbert Spencer (q. v.) claimed for the development of the soul an organic growth subject to the ordinary laws of organic development, and made psychology strictly a natural science.

The development of educational ideas, as it has here been briefly traced, undoubtedly shows, that in every department of the subject a wonderful progress has been made in the course of the last three centuries. This progress is universally recognized, and there is not at present a civilized state which does not reflect it in its school legislation. (See the articles on the several countries and states.) Official statistics prove that school attendance is becoming more and more general, that illiteracy is on the wane, and in some countries scarcely known, and that the diffusion of education tends to the diminution of crime. Still, on many great questions, there continues to exist a marked difference of opinion. Has the state government a right only to recommend and promote, or may it compel the education of children? (See Compulsory Education.) Should instruction in the state schools be gratuitous? (See Public Schools.) Are the two sexes to be educated in separate or in mixed schools? (See Co-education of the Sexes.) Is religious instruction to be given in or out of the state schools? (See Denominational Schools.) All these questions are fully treated of, in this work, in special articles.

The outlines of a history of education are contained in the works on education in general by Schwarz, Niemeyer, Gräfe, and Rosenkranz. (See literature at the end of this article.) Special works on the history of education have been written by Wohlfarth (*Geschichte des gesammten Erziehungs- und Unterrichtswesens*, 2 vols., 1853 & 1855); Körner (*Geschichte der Pädagogik*, 1857; Karl Schmidt (*Geschichte der Pädagogik*, 3d edit., by Lange, 4 vols., 1872—1876); Dittes (*Geschichte der Erziehung und des Unterrichts*, 4th ed., 1875); Fritz (*Esquisse d'un système complet d'instruction et d'éducation et de leur histoire*, 3 vols., Strasburg, 1841—1847); H. J. Schmidt (*History of Education*, New York, 1842); Hailman (*History of Pedagogy*, Cincinnati, 1874). A history of education from the revival of classical studies to the present time has been written by Karl Raumer (4 vols., 1844—1852). Of this there is an English translation in Barnard's *American Journal of Education*; the larger portion of the translation of the first two volumes has also been published separately under the title, *Memoirs of Eminent Teachers and Educators in Germany*; and the translation of the fourth volume, under the title, *The German Universities*. A history of education before Christ is given in Cramer, *Geschichte der Erziehung und des Unterrichts* (2 vols., 1832 and 1838).

II. *Theory of Education.* — The word *education* is derived from the Latin verb *edŭco* which is properly used to designate the sustenance and care bestowed by a nurse on a child; and it is, no doubt, connected etymologically with the Latin verb *edūco*, to lead out; but it never has this literal sense, and it is extremely unlikely that the Romans connected the idea of *drawing out* with that of *educatio*. In order to get at a true idea of education, we must look at the circumstances of the case. We proceed by way of analogy. We know in regard to the seed of a plant that it contains a peculiar and special power within it. Place it in the proper soil, with the proper temperature, and it will burst forth into active life. It will gather from earth and air the means of support and increase. It will fashion the elements which it lays hold of into a definite shape, and it will pass through various stages of progress until it withers away, leaving, however, behind it the means of continuing the species. Within certain limits, the plant has a definite form of its own, and its mode of life is also uniform; and, within these limits, there lies a perfect form and a perfect life for the plant. It may not be easy to say what is that perfect form and perfect life, but it is plain to every observer, that it, as it were, strives after an ideal form and an ideal progress, to which it approximates more or less closely. Man is like the plant. The living power within him strives to attain a particular form, and to go through a particular progress, and it continually strives to attain an ideal of these, within certain limits. The difference between the plant and the man is, that the limits of his condition and progress are much wider, and that he can consciously form an ideal for himself, and strive after it. Now education, in its proper sense, is the deliberate effort on the part of one conscious being to clear the way so as to enable another to attain this perfect condition of life and this normal progress. It is assumed that the man naturally strives after perfection. It is assumed that he must move in some direction, whether forward, or zigzag, or backward; and the educator endeavors to keep the movement in the right direction.

The word *education* is used in a variety of senses, connected but not always compatible with the true idea. Thus man is viewed as being, in his earliest stage, a kind of compressed mass of faculties, and education is the drawing out of these faculties. Again, every thing that acts on man's nature is sometimes said to be educative, whether the result is beneficial or not. Other instances could be adduced of the use of the word in the vaguest manner; but by stating the true idea we oppose ourselves to the vague uses of the word. It is enough, therefore, to state first that man must be viewed, not as passive but as active, not as being drawn out, but as striving to act, and that no act is truly educative which does not help him to strive after actions that are becoming to his nature, or, to express it objectively, to strive after what is good, beautiful, or true.

But, in thus stating the work of education in a general proposition, we have done very little towards explaining its true nature. Education sets before it an ideal. How are we to form anything like an adequate conception of this

ideal? Only by a minute and careful study of human nature; and, therefore, every educator must necessarily devote a great deal of his attention to the phenomena of body and mind, and to man, the combination of both. The ideal is a unity, but it is a composite unity, made up of the perfect accomplishment of endless detailed actions, and we must, therefore, examine all the details before we can attain to a clear notion of the whole.

The subject may be viewed in another light. Every portion of man is made or preformed for a special function or functions. Thus the eyes are made for seeing, the hands for grasping, the skin for touch. For what is the whole body made? For what is man, body and soul, made? It is the work of the educator to help him whom he educates to discharge the functions for which, as man, he has been made or preformed. Accordingly, most of the definitions of education which have been given, have been based on the answer to the question, what is the chief end — the *summum bonum* — the destiny of man? This was a question which occupied the attention of the ancients much, and Clemens Alexandrinus has gathered together a large number of the answers which ancient philosophers gave to the inquiry. These are interesting to the educator, because they suggest different points of view from which to look at the problem. In more modern times, the form which the answer has most frequently taken is the statement that it is the work of education to produce, as far as it can, an equable and harmonious development of all the powers of man. Herbart and his school object to this way of expressing the aim of education. The term *powers* is apt to mislead. There are no separate and special faculties in man's mind. All the best psychologists admit that these faculties are fictions; and, therefore, the aim of education must be defined apart from these. Herbart himself defined the aim of education to be morality; but he used the word in a truly philosophical sense, in which it is not understood by the masses, and, therefore, he preferred to state the object of education to be, to produce a well-balanced many-sidedness of interest. The emphasis laid on *interest* has been productive of much rich fruit in educational investigation and experience; but, practically, Herbart's definition comes to the same as the other. Man is viewed as destined to a series of activities closely connected the one with the other. These activities may be in harmony with his nature, or his ideal nature, as we may call it, or they may be more or less aberrations from it. The business of the educator is to prevent the aberrations, and to help those activities which are in harmony. Those activities which are in harmony find their sphere in nature, in man, in God. It is important that all these activities come into play. Man does not pursue his ideal course, if they do not come into play. He must be fully developed. But if his activity comes into play on these subjects according to the right method, his interest in them is awakened and becomes stronger and stronger; for all pleasure is the accompaniment of the vigorous discharge of some function, and all pain is the accompaniment of the weak discharge or hindrance of some function. If the organ which discharges the function is exercised too powerfully, as may be the case with our bodily powers and lower mental energies, there is first intense pleasure; but the over-tension impairs the healthiness of the organ temporarily, or it may be permanently, and then the impaired activity is followed by pain. And the pleasure that may arise, may arise from the exercise of what we call lower functions, when higher are neglected. Thus the lazy man desires true pleasure, as far as it goes, from the vigorous exercise of his vital or vegetative powers. But, whatever pleasure does exist, exists from the efficient discharge of function, or in other words from healthy activities of body or of mind. This pleasure may not be consciously before the mind, as in the highest intellectual operations when the student does not feel how intense has been his enjoyment, until the enjoyment is over. This accompaniment of all our healthy actions is cumulative. It grows in degree, in proportion as the actions are repeated in a healthy or proper manner. And, hence, our interest increases with the healthy repetition of the activities on the objects. Herbart's definition becomes, therefore, nearly synonymous with the other, but directs the attention to the external side of man's activity, to the objects on which the mind works. Both sides must be carefully considered by the educator; for, in the activity of man, they are invariably conjoined. The distinction between *formal* and *material* in education has to be made with great caution: and it has always to be remembered that form is impossible without matter, and matter impossible without form, that while there can be no right activity, if the mind does not act in a right manner, it is equally true that there can be no right activity, if that on which the action takes place is not a right object for the mind to act upon.

After having thus generally discussed the aim of education, we should now enter minutely into particulars, for the general is of slight use without the particular; but this would be to write a treatise on the laws of the activity of the human mind, and the modes to be adopted by men to direct these activities aright in the young. We must, therefore, confine ourselves to hints which may suggest to the reader the subjects which deserve his careful and minute examination.

A child gazes at an apple on a tree. What are the operations of the child's mind? First, we have the exercise of the bodily organ. Then the apple produces an impression on the child's mind. This impression we call a sensation. The child feels something. Some change has taken place within him. But, if this is not the first impression which the apple has made on the child, we can observe that the sensation has attained in its complexity to three phases: First, the child has the feeling of pleasure in seeing the apple; second, he sees that there is an object before him which he calls an apple; and, third, if, on a previous occasion, he has tasted apples and enjoyed them, the recollection of that enjoyment comes back, a desire arises within him, and he is under an impulse to make an exertion to obtain the apple. In this one instance, we have the various phases of man's activities. He is, first of all, a physical being; then he is capable of feeling,—has an emotional nature; then he is capable of perceiving,—has an intellectual nature; and, finally, he is capable of desiring, of striving after, and, thus, has a practical and moral nature. Though we speak of him thus as if he had four natures, he really possesses but one. All the distinctions, except perhaps the first, are distinctions made by the mind, but the facts do not exist separately. The emotional, intellectual, and volitional are blended with each other in the actual human mind. The mind cannot exist without them. There can be no absolute separation of them; since they stand in the closest relation to each other. Yet it is essential to separate these elements in our discussion of them; for they may blend with each other in different degrees. The one phase may predominate to the injury of the others. A man may have a clear head, but a hard heart and a stubborn will. Another may be too emotional, ready to melt before the slightest distress, and yet possessing almost no capability or inclination to relieve the distress. The true aim of man is to bring out all the elements in harmonious proportion, and the work of the educator is to help each child to accomplish this difficult task for himself.

First, then, there is *physical education*. The aim and end of physical education is to produce health, not strength in particular organs, but a general healthiness of all the organs. This aim is accomplished by a careful examination into the nature of the human body, an exposition of the laws of health which arise from this study, and the exhibition of the reasons which ought to lead us to give all due care to the body. This subject is treated under the head of physical education. Secondly, there is *intellectual education*. This education is based on a careful investigation into the laws which regulate the gradual progress of the mind from its earliest weak state of mere sensation till it reach the power of dealing with the most abstract ideas. (See SENSES, EDUCATION OF, and INSTRUCTION.) Thirdly, we have the *education of the emotional nature*. And here we enter upon a more difficult sphere —one in which the educator has often to grope in darkness; for the emotions are not directly under his control, and the movements of the mind in regard to them are hid in such secrecy, that sometimes an influence which seems to us likely to produce one emotion, actually produces the opposite; as, for instance, efforts to beget love may have for their result the production of dislike. We shall here take a short glance at this important subject.

The first point to which the attention of the educator may be directed is a general result at which he may aim. The broadest division which can be made of the feelings is into those of pleasure and those of pain. The mind assumes a particular attitude in consequence of its experiences of these. We shall take a case. A child performs a mental act. He does it successfully. He feels pleasure. He performs another successfully. The recollection of the past pleasure unites with the present feeling, and the feeling is stronger. Others thus blend until the child has a permanent state of feeling; or, as we may call it, a mood. He looks forward with hope; he expects to be successful; but he may fail. A failure takes place; he feels pain. The feeling of pain now acts antagonistically to his feeling of pleasure; and, if these painful feelings recur, the one set strive for the mastery over the other; and the result will be, that the mind will ultimately be in a bright and cheerful mood, or in a dark and gloomy one; it will either be full of hope or be given to despair; or, at the least, have a tendency to go in the one direction or the other. There can be no doubt that it is the business of the educator to produce the bright, cheerful, hopeful mood. This is the natural mood, if we use the word natural as expressive of the ideal after which nature strives. This mood is the result of the successful discharge of all the functions; and it is of immense consequence for the child to have this mood. The mind communicates its tone to every thing around it; and so the cheerful mind sees good in every thing, catches the bright side, and strengthens all the powers; for the cheerful mind becomes the strong mind. Obstacles, pain, failure are sure to come; but the cheerful mind casts them all aside, rises superior to them, and, after temporary depression, sees again with the same clearness, and hopes with the same steadfastness. The methods by which the educator can help to produce this state of mind in his charge are various, and must all be used. First of all, he must himself be of this cheerful and hopeful mind. There is no direct teaching on excitation of the emotions; but they are often produced, in the proper circumstances, by what we may call infection. Love begets love; we catch admiration from those who have felt the admiration before us; and, no doubt, the sweet, gentle, loving smiles of a mother who is uniformly kind to her child, have a powerful influence on his whole destiny, a more powerful influence than they are generally believed to exert. Secondly, health is a mighty agent in the earliest stages of life, before it can be expected that the mind should triumph over bodily evils; and, therefore, special care should be taken to render the infant healthy. And, thirdly, after a certain stage has been reached, some truths reached by the intellect can come powerfully to the aid of the emotional nature; such, for instance, as a belief that the arrangements of this world are in favor of man, that the amount of happiness in the world is much greater than we may suppose, that God is working all things to wise and noble ends, and that man's destiny is for virtue and love. When we pass from this general consideration to the particular feelings, we find ourselves in a labyrinth. A feeling is a phase of mind which arises from the consciousness of having passed from one state into another; and, accordingly, no mental act can take place without a feeling. Hence, we have feelings connected with the body, feelings connected with the intellectual operations, and feelings connected with the practical and moral nature. Or we might speak of the feelings according to the objects which give rise to them; as those that arise in connection with nature, with one's own self, with man, with God. We select out of these, two classes of feelings that especially deserve the attention of the educator. The first class deserve attention principally because they are in danger of being neglected, owing to the character of the present age. The educator should awaken and keep alive the feelings of admiration and mystery. A child naturally wonders and admires, and these feelings must not be allowed to die out. Moreover, the sense of mystery, closely connected with these, will be a source of great blessing to him. The practical man is apt to look on all things as definite and fully known; but the fact is, that nothing is completely known. We know neither the beginning nor the end of any thing. The smallest object and the largest are equally invisible to us. Our knowledge is limited by a boundary that lies far within the infinitesimally great and the infinitesimally small; and so all knowledge attained points to an infinite region the depths of which we have not sounded. A consciousness of this is closely connected with a humble spirit, and true humility generally allies itself with love. The second class of feelings is that which relates to the beautiful. The sense of the beautiful is the power to feel the loveliness of symmetry, of proportion, of harmony. This power is to be acquired only by the exercise of it. The symmetry and loveliness exist in nature. They are calculated to produce an effect on the soul of man, but the soul of man must be brought into contact with them, before it can feel them. Therefore, in regard to the cultivation of the feeling for the beautiful, the one essential condition is, that beautiful objects be placed before the person in whom the sense is to be awakened and strengthened, and that they be placed frequently and at proper intervals; because the sense of the beautiful is awakened only by slow degrees, and it expands, passing from the external and simple to the harmonies which prevail amidst the grandest spheres of thought and intelligent existences. But it can be brought before the pupil in every form at an early stage, in beautiful pictures, in beautiful rooms, in beautiful landscapes, in order, in gentleness of tone, in noble action, and in many other ways, so as to induce within himself a love of all that is orderly, harmonious, and peaceful.

Two cautions may be specially urged in connection with the cultivation of the feelings. The first is, that it is possible to render a human being too sensitive, to give feeling too great a preponderance in the individuality of the person educated. Such a person becomes sentimental, is easily moved to joy or tears, is sympathetic in the highest degree, but the sympathy does not lead to action. The educator has to take care that every train of feeling be strengthened and guided aright by clear and well-reasoned convictions, and be followed by appropriate action. The second danger is, that the feeling of self may become so strong as to harden every other. Naturally every one bestows a great deal of attention on himself, and there is a tendency to feel only when the circumstances relate to one's self. Here, again, what has to be done is, to prevent the mind's being occupied too much with self, and to interest it in the thoughts and circumstances of others. Both these cautions point to the next division of the sphere of education — that of the will or of the practical powers. The exercise of these is closely connected with the intellect and the feelings, and indeed ordinarily results from them. Man is naturally a striving or desiring being. He is a force, and by a force we mean something that strives to exert itself. Accordingly man's first act is an effort. And the powers which he at any time possesses strive for spheres of action. But these spheres are in the main determined by the results of the action of his intellect and the motive power of the feelings. A child does something which gives him pleasure. He has finished the action. He turns to something else. What remains of the previous action? A recollection of something pleasant; but the recollection of something that is pleasant excites the desire to enjoy it again. Thus arise desires in the mind; and as these desires arise again and again in connection with objects belonging to separate classes, groups of desires or inclinations arise, and we call these groups by general names, such as the love of money, the love of honor, the love of fame. These desires grow in intensity according to the amount of time during which they are allowed to continue in the mind, and the amount of space they are allowed to occupy in it. Add to this fact that we naturally put a value on the things which we desire, and regard some as higher than others, and we enter the region of morals. Two or three functions of mind lie before us which we are able to discharge at the time. We weigh these functions in the balance. We pronounce one of a higher nature than the others. This is the one which we feel bound to perform. Thus the function of the eye is a nobler one than that of the the nose or the taste; and, hence, the educator who trains the child to see is performing a nobler function than he who indulges a child's taste for sweets. All functions may be necessary, but each must have its own place in a well-arranged and systematic order of gradation.

The first essential, then, to a good practical training is to impress on the pupil the true value of all actions and things. He is enabled to attain to this only by having a clear intellect and a right state of feeling, and, therefore, it cannot be too strongly urged. that a thorough intellectual education is an important element in the attainment of a sound moral character. But, besides this, we learn to act by acting. There is a natural instinct to act, and this instinct must not be resisted or blunted. It is by one action that we rise to the power of doing a greater. Here the same kind of fiction as that which we have noticed in the case of the mental faculties is apt to mislead. Man is often spoken of as possessing a will; but man has not one will, but many wills. The word *will* is used to denote the complicated power which man possesses, through his original faculties and the exercise of them, to will for the future. But, if this be the case, the strength of the power to will in any particular case depends upon the previous exercise which the mind has had in willing similar actions; and so a man may have a strong will in one direction, and a weak will in another. Hence, the educator must take care to bring into activity the willing power of his pupil in as many directions as he can, without impairing his strength of will in the most important directions. Moreover, in action, we are influenced strongly by the action of others, just as in feeling by the feeling of others. The teacher who wishes to lead his pupils to action, must himself act first. The influence of example is all-powerful in this matter. And, finally, as willing depends first upon fixing an appropriate aim, and, secondly, on selecting the right means, the pupil must be trained, in all cases, to use the right means. The clear insight into the true value of actions, that is, into the aims which should guide us, may be of comparatively little use, if we have not the good sense to employ the suitable means for our purposes. These are the general rules which regulate practical education. It would be impossible in an article like this to go into the particular phenomena which must be investigated before the educator can have a proper grasp of the subject. Just as in the case of the feelings, desires and inclinations arise in connection with all the activities of man,—with the physical, the intellectual, the emotional, and the practical forms of man's energy; and they embrace the same extent of objects. They connect themselves with nature, with one's own self, with other men, with God. But, they have wider ramifications, and a more potent influence than the feelings, and open up, therefore, a wider field for investigation; and, in this subject, the aberrations demand the closest attention. The educator has continually to guard against the formation and the strengthening of inclinations which are dangerous to the well-being of the individual and the race.

Lastly, there is religious education, embracing within it intellectual, emotional, and moral aspects. Religion may be said to arise in a feeling. We feel our weakness and littleness. We feel that we are limited in power, in knowledge, in vital energy. We feel surrounded, on every hand, by powers that are stronger than we are, and hemmed in by irresistible forces. If this, however, were the only feeling, despair would lay hold of us. But, we come to feel that the irresistible forces are not antagonistic to us, that we can come into harmonious relations with the supernatural, that, to use the Christian mode of thought, we can trust in a God of justice and love. It is when we gain this feeling of trust that we attain to a religion. But, a religion advances beyond the mere feeling; it sets down God or gods, as possessing a certain character, and, therefore, enjoining a certain kind of worship. Especially does the Christian religion present definite conceptions as to the character of God, and enjoin, as the first condition of worship and as the great law of life, love to God and love to man practically exhibited. The Christian religion thus brings into play the feelings as the foundation of religion, the intellectual powers in apprehending its great truths, and the inclinations and practical powers in carrying them out. The discussion of this subject belongs to the article on *religious education*.

The subject of education is discussed in a great variety of treatises. The most satisfactory discussion, in our opinion, is contained in the works of Herbart and Beneke. Herbart's educational writings have been collected and published recently in two volumes (Leipsic, 1873—1875) under the editorship of Otto Willmann. Beneke's great work on the subject is *Erziehungs- und Unterrichtslehre* (2 vols., third edition, Berlin, 1864). The first volume is devoted to *Education*, the second to *Instruction*. Of the followers of Herbart, Ziller's works deserve special mention; and of those of Beneke, the works of Dittes and Dressler. The educator will also derive much good from the study of the best works on psychology. Both Herbart and Beneke have written handbooks of psychology; and, in English, special mention may be made of the writings of Sir William Hamilton, Dr. Morell, Prof. Bain, and Mr. Herbert Spencer, the last of whom has a work specially devoted to education (*Education: Intellectual, Moral, and Physical*). See also Niemeyer, *Grundsätze der Erziehung und des Unterrichts* (9th ed., 1845); Schwarz, *Erziehungslehre* (3 vols., 2d ed., 1829), and *Lehrbuch der allgemeinen Pädagogik* (2 vols., 4th ed., by Curtmann, 1843); Græfe, *Allgemeine Pädagogik* (2 vols., 1845); Palmer, *Evangelische Pädagogik* (3d ed., 1864); Rosenkranz, *Die Pädagogik als System* (1848; English translation by Anna C. Brackett, St. Louis, 1873); Dittes, *Schule der Pädagogik* (1876).

The most comprehensive cyclopædia of education is the *Encyclopädie des gesammten Erziehungs- und Unterrichtswesens*, by Schmid, (11 vols., 1857—77). A second edition, revised and enlarged, of the first volume was issued in 1876. A compendium of this work in 2 vols., under the title *Pädagogisches Handbuch*, was begun by the same editor in 1875. The *Real-Encyclopädie des Erziehungs- und Unterrichtswesens*, by Rolfus and Pfister (4 vols., 2d ed., 1871—5), has been prepared from the Catholic point of view.

EDUCATION, Female. See FEMALE EDUCATION.

EDUCATION AND CRIME. See CRIME AND EDUCATION.

EGYPT, a dependency of the Turkish empire, in N. E. Africa; having, with its recent conquests, an area of 869,332 sq. m., and a population, in 1875, of 16,922,000. The area of Egypt proper is 212,607 sq. m.; and its population, 5,252,000. The principal races of people represented in Egypt, are Arabs or Bedouins, Turks, Armenians, Berbers or Nubians, Jews, the Copts, who are the recognized descendants of the ancient Egyptians, Europeans of different nationalities, and, in the newly conquered provinces, negroes. The religion of the large majority of the inhabitants is Mohammedanism. There are, besides, 350,000 Copts or native Christians, and 250,000 others who profess Christianity. Egypt was, in ancient times, the seat of a wonderful civilization, its history reaching farther back than that of any other nation. After having been ruled by a number of native dynasties, and having been part of the Persian and Macedonian empires, it became, in 30 B. C., a Roman province, and afterwards formed part of the Eastern Empire. Christianity was introduced during the first century; and Egypt, particularly Alexandria, became a noted seat of theological learning and institutions. In 683, it was conquered by the caliph Omar, who introduced Mohammedanism. In 1517, it came under the rule of the Turks, under whom it has, actually or nominally, remained ever since. In 1806, Mehemet Ali was appointed pasha and governor of Egypt. He made himself virtually the absolute ruler of the country, and was prevented only by the European powers from proclaiming his entire independence of the Turkish sway. Under his successors, who continued to promote the welfare of the country, and to effect reforms in the administration, the country prospered greatly. At the present time, its dependence upon Turkey is merely nominal, and the complete severance of the tie appears to be only a question of time. Immense tracts of land in the south and south-west have, of late, been annexed; so that if it were an independent empire, it would now (1876) rank as the seventh nation of the world in regard to area.

Educational History.—This will be treated under two heads: (I) Ancient Egypt, (II) Modern Egypt.

I. *Ancient Egypt.*—In respect to education, Egypt before the Christian era occupied a peculiar position. With China, India, and Persia (see the articles on these countries), it was one of the chief representatives of orientalism. While, in common with the other oriental nations, it aimed at a national not an individual education, it is to be considered as presenting a connecting link, in this respect, between the extreme eastern institutions and the educational systems of Greece and Rome. To a greater extent than in any other oriental country, national education was under the controlling influence of the priesthood. The priests and the warriors were privileged classes; but, in their education, the priests enjoyed several prerogatives over the warriors. There were schools for priests and warriors at Thebes, Memphis, and Heliopolis. In these schools, there were two systems of instruction,—an *exoteric* course, for those who were not prepared for higher instruction, and an *esoteric* course, to which only those youths were admitted who belonged to the priestly caste. The instructors in both classes of schools were priests. The subjects of instruction were language, mathematics, geometry, astronomy, natural history, music, and religion. The princes were educated by the best instructors, and only with the sons of priests, who were twenty years of age, and noted for their good manners, so that the royal students might not come in contact with any thing impure. The education of other castes was of a very low order, as was that of females; but common institutions of learning were not entirely wanting. Plato tells us that the children of the Egyptians learned to read, while Diodorus Siculus says that they learned a little of reading and writing, but adds that all did not enjoy these advantages, but chiefly those preparing for a profession. The common people, he says, received some kind of an education from their parents. In writing, the bark of the papyrus and black or red ink were used. In writing as well as in reading, there seems to have been a separation into castes, since of the three modes of writing, the *demotic*, *hieratic*, and *hieroglyphic*, the latter belonged to the priests only. Arithmetic and mathematics were studied throughout the country with great attention, and the methods employed in teaching these studies were excellent. According to Diodorus, gymnastics and music were not comprised in the general plan of education, because it was believed that the former was dangerous to the youths, and that the latter was not only useless but hurtful. In Chemmis, however, considerable attention was given to gymnastics, as well as to music, the latter being devoted to religious purposes. The Egyptians, even in the most remote ages, seem to have had a great regard for the influence of education; for, according to Diodorus, the father of Sesostris had all the boys assembled who were born on the same day as his son, and arranged that all should receive the same education, in the belief that those who were educated together, would prove the best friends and comrades in war. The physical training of children was very severe; they were obliged to go barefooted and almost entirely naked, and were brought up with such economy, that the entire education of the child cost only a small pittance. The educational system of Egypt was entirely remodeled when Psammetichus (670 to 616 B. C.) undertook a thorough reform by introducing Greek and Phœnician elements into the institutions of the country, and for that purpose formed alliances with the Athenians and other Greeks, and afforded aid and encouragement to all foreigners who came into the country. He entrusted the education of Egyptian children to Carians and Ionians, by whom they were also instructed in the Greek language and fitted for the office of interpreters. Otherwise, foreign languages were not taught in Egypt; but the princes who ruled over different tribes seem to have understood their respective languages. Thus Cleopatra is said to have spoken Hebrew, Arabic, Ethiopic, Syriac, etc. Alexandria became, in course of time, the principal emporium of the ancient world, and subsequently also the center of learning and education. Under the Ptolemies, a strong impulse was given to the arts and sciences, especially to those which had a practical application; as mathematics, astronomy, medicine, grammar, and history. Indeed, there is scarcely another period in the world's history in which science was held in greater honor than by the Ptolemies in Alexandria. The museum, a royal palace, formed the residence and seat of instruction for the learned men of Greece, who had emigrated to Egypt. This institution was founded in 322 B. C., and was at the highest point of its celebrity from 232 to 30 B. C. After Egypt became a Roman province (30 B. C.), this school gradually declined. About the end of the second century, Alexandria became the birthplace of a new philosophical school,—that of *neoplatonism*, which gave a considerable impulse to philosophical and theological studies, without, however, exerting a direct influence upon the development of education. (See Alexandrian School.) With the introduction of Christianity as the state religion, the last remnants of the old civilization were destroyed. (See Schmidt, *Geschichte der Pädagogik*, vol. I.)

II. *Modern Egypt.*—Since the establishment of Mohammedanism in Egypt, its educational history has been substantially the same as that of other Mohammedan countries. (See Arabian Schools.) Instruction of every grade was based on the Koran, and school and church have never been more intimately connected in any country. The strict Mohammedan has always believed, with the Prophet, that "every thing worth knowing is contained in the Koran," and that "much investigation is heresy." The schools were exclusively intended for boys, and most of them were connected with the mosques; in smaller places, private schools were frequently founded by *fakihs*, or jurists of the lowest rank. These schools were generally of the most rudimentary character, the only school book used being the Koran. Most of the high schools (*medrissas*), which were founded in the first years of the caliphate, and at which Mohammedan theology and law, philology, philosophy, logic, mathematics, medicine and alchemy, astronomy, history, geography, and rhetoric were taught, have disappeared in the course of time. At the beginning of the present century, Mehemet Ali attempted to reform the schools of the country, chiefly with the desire to have a better class of public officers. He founded about 50 primary schools, which were scattered over the country, and contained about 5,000 pupils. Secondary schools were founded at Cairo and Alexandria, and had, at one time, about 2,000 pupils, who were both instructed and supported at the expense of the government. He also founded a number of special schools, in which it was designed that Egyptian youth should be educated after European methods, and partly by European teachers. Of this class of schools were the medical school at Abu-Zabel, the cadet school at Gizeh, the marine school at Alexandria, the school of engineers at Khanke, the medical college of Kasr-el-Ain, the artillery school of Turrah, the veterinary school, now at Kubbeh, and the musical school in the citadel of Cairo. A college for young Egyptians was also founded at Paris, but only a few of the young men who were educated there at the expense of the government, subsequently devoted themselves to the cause of education. The most distinguished among them is Sheikh Refah, who was sent to Paris in 1826, and, after his return, endeavored for many years, both as a writer and as an educator, to make his countrymen acquainted with the intellectual and educational condition of Europe. Most of the schools which had been founded by Mehemet Ali, were abolished by his successors, Abbas Pasha (1849—1854), and Saïd Pasha (1854—1863). Under the government of Ismaïl Pasha, the present Khedive (1876), very praiseworthy efforts have been made to effect a radical reform in education, by the establishment of government schools. A council of instruction has been established at Cairo, which has the control of all the schools of the country. The course of instruction adopted for the new schools is a kind of compromise between traditional Mohammedanism and modern civilization as developed in the Christian world. It has awakened among the friends of educational progress great hopes for the future; but, as yet, every thing depends on the favorable disposition of the actual ruler. Only the establishment of a connection between the communes and these schools would be able to place the latter on a firm basis. The new government schools embrace primary, secondary, and special instruction. They were first erected in 1868, since which time they have made rapid progress in the large cities. The number of pupils, in 1870, was about 4,000; in 1873, 8,000. They received not only gratuitous instruction, but support, inclusive of clothing. Primary instruction embraces the reading and writing of Arabic, arithmetic, drawing, and French or some other foreign language. From the primary classes the pupils pass into the secondary schools, which are composed of a preparatory school, embracing, in a three years' course, the study of Arabic, Turkish, English, French, German, mathematics, drawing, history, and geography; and the special schools, into which the pupils enter after finishing the above course. These special schools are the following: (1) The *Polytechnic School*, the pupils of which, after finishing a course of four years, may choose, as in France, between a civil and a military career; in the former case, they attend for two years the

School of Administration, and then enter the service of the state; in the latter case, they enter the military academy of the Abassieh, at Cairo. (The former of these institutions, in 1871, had 75 pupils; the latter, 750. In 1871, the polytechnic school had 80 pupils.) (2) The *Law School*, embracing a course of four years, in which, besides the Mohammedan law, the Roman law and that of the Christian nations in general are taught; (3) The *Philological and Arithmetical School*, giving instruction in philology, mathematics, rhetoric, prosody, and drawing; (4) The *School of Arts and Industry*, in Balak, established by Mehemet Ali, and greatly improved under Ismaïl Pacha (it has a course of three years, and had, in 1871, about 100 pupils); (5) The *Medical School*, with 75 pupils, in 1871, to which is attached a school of midwifery (the only one in the East), with 65 pupils. (The Khedive, in 1871, offered the people of Syria to receive twenty-five students from that province into the Medical School, irrespective of race or religion. A large number of candidates presented themselves, but there was not one Mohammedan among them, all being Christians.) (6) The *Naval School*, in Alexandria, with 85 pupils, in 1871. In 1871, the Egyptian government called to Cairo professor Henry Brugsch, of the university of Göttingen, to establish there an academy for archæology, and, in particular, for Egyptological studies. The Khedive is also endeavoring to eradicate the prejudice existing against female education; and, for that purpose, has founded a girls' school at Cairo, in which, besides receiving an elementary education, the pupils are instructed in sewing, washing, and dress-making. In 1875, the Egyptian government resolved to establish a teacher's seminary after the German model, and applied to the Prussian ministry of education for two teachers to take charge of the institution. The voluntary schools, in opposition to the government schools, are annexed to the mosques, and intended for elementary instruction. If the statistical reports can be relied upon, these contained, in 1870, 60,000 pupils, and, in 1873, 82,000 pupils, among whom were many adults. These figures would indicate a rapid progress since the time of Mehemet Ali, when only one in a thousand of the entire population received instruction. From an official report on the voluntary school at Alexandria, which was opened April 1., 1868, under the protectorate of the heir apparent, Mehemet Tefvik Pasha, it appears that this school, on the opening of the adult classes in April, numbered 30 pupils; in June, 70; in July, 150; in November, 240; of the latter of whom 59 were Egyptians, 52 Italians, 21 Frenchmen, 20 Greeks, 24 Englishmen, 32 Syrians, etc. The elementary schools for children were opened in April 1868; and, in November, the number of pupils amounted to 269. The languages in which the instruction is imparted, are Arabic, French, and Italian. Most of these schools are supported by the mosques, some by the divan of *wakufs* (religious donations); some have property of their own; some receive aid from the ministry of finance, and some defray their expenses by means of subscriptions and by school money.

The university of Cairo, called *El-Ashar* (the blossom) after the name of the mosque with which it is connected, was once a really flourishing center of Arabic science and scholarship. At present, like the other famous mosque high schools of the East, at Damascus, Mecca, and Bagdad, it teaches little more than Mohammedan religion and law, grammar, arithmetic, logic, and rhetoric; but it still preserves its former reputation throughout the East, and is visited by students from Turkey and Asia Minor, from different parts of Africa, from Arabia, and even from India and the Sunda Islands. The number of students, in 1871, was reported as 9,668. In the preparatory classes, about 2,000 pupils are clothed and supported at the expense of the *wakufs*; instruction is given by 260 teachers or *kattabs*, of whom 160 are likewise supported from the revenue of the *wakufs*. The students in the higher classes are taught by about 40 professors, most of whom, besides, hold some other ecclesiastical or legal office. The lectures are given gratuitously. At the time of its greatest prosperity, the university sometimes numbered more than 20,000 pupils. The first school for the blind was founded a few years ago by Mohammed Effendi Onsy, and is conducted by him at his own expense. It is doing a great amount of good, as a large number of persons lose the use of their eyes by the so-called Egyptian disease (a kind of ophthalmia). The annual examinations held in arithmetic, reading, and different kinds of handiwork, exhibit considerable proficiency on the part of the pupils.

Missionary and Foreign Schools.—The number of foreign residents, in 1872, was 79,696, of whom 47,316 were inhabitants of Alexandria, and 19,120 of Cairo. As they are the wealthiest and best-educated class of the population, a number of schools have been established for the education of their children. The French School Brothers and Lazarists have day and boarding schools; and female schools are conducted by French Sisters of Mercy and other religious orders. With one of these institutions at Alexandria, which has from 400 to 500 pupils, an orphan house and a foundling institution are connected. Instruction in these schools is given in the French language. The Greek lyceum in Alexandria in 1873, had 70 pupils; and the *Collegio Italiano*, 120 pupils. There are also several Greek, Italian, and German elementary schools. Presbyterian missionaries from the United States have established a number of mission schools, as well as an academy and a theological seminary, both at Sioot, the leading town in Upper Egypt.—See STEPHAN, *Das heutige Aegypten* (Leips., 1872); ADAMS, *The Land of the Nile* (London, 1871); RÉGNY, *Statistique de l'Égypte* (fifth annual publication, Cairo, 1875); LUETTKE, *Aegypten's Neue Zeit* (2 vols., Leips., 1873); DORR, *L'Instruction Publique en Égypte* (Paris, 1873).

ELABORATIVE FACULTY, a term often used, at the present time, to indicate that function of the mind by which it employs the materials supplied by sensation, perception, conception, and consciousness (or the inner sense), and builds them up into systems or chains of thought and reasoning. The different processes that, according to this nomenclature, are elaborative, are comparison, abstraction, generalization, judgment, and reasoning. To these particular processes the term *thought* is now often restricted, instead of being applied, as formerly, indifferently to every intellectual operation. Dr Hopkins, in *An Outline Study of Man* (N. Y., 1876), thus describes this faculty and its functions: "The processes of the elaborative faculty hold the same relation to the materials brought into the mind that the processes of building and repairing hold to the materials which are brought into the body. The building and repairing systems take hold of that which is brought into the system and elaborate it; they transform it, and make of it another thing. The elaborative system does the same thing in the mind. It takes the material given by the presentative faculty [sensation, perception, etc.], and performs the operations of comparison, abstraction, etc." Dr. Porter, in *The Human Intellect* (N. Y., 1869), thus defines the office of the elaborative faculty: "The thinking power has been treated as twofold, and been subdivided into two: the *elaborative faculty*, as performing the processes, and the *regulative*, as furnishing the rules, or more properly as prescribing the sphere and possibility of thought. These are named also the *dianoetic* and the *noetic* faculty. By some writers they are distinguished as the understanding and reason, in a usage suggested by Kant, but deviating materially from his own. Milton and others call them the discursive and instinctive reason." (See INTELLECTUAL EDUCATION.)

ELEMENTARY SCHOOLS, etymologically, schools in which the elements of instruction are taught. The name is used in Germany (*Elementarschulen*) sometimes as synonymous with public schools in general, but more frequently and correctly to designate the lower or primary departments of the public schools. Some writers think that the name elementary instruction should be only applied to the lowest class of a school. In Sweden, a peculiar meaning is given to the word, as it denotes institutions of a higher grade in opposition to the people's or lower schools. In England, according to the "New Code of Regulations", 1876 (Art. 4), an elementary school is a school, or a department of a school, in which elementary instruction is the principal part of the instruction given, and does not include any school or department in which the ordinary payment for tuition, from each pupil, exceeds nine pence a week. (See PRIMARY EDUCATION.)

ELEMENTARY SCIENCE. See SCIENCE, TEACHING OF.

ELLIS, WILLIAM, an eminent English writer and educationist, born in the vicinity of London, in 1800. His labors have been specially given to the advancement of social science, which, through his efforts, was introduced as a branch of elementary instruction in the London schools. His chief writings are *Outlines of Social Economy*, *Progressive Lessons in Social Science*, *Phenomena of Industrial Life*, and *Education as a Means of Preventing Destitution* (London, 1851).— See KNIGHT'S *English Cyclopædia*.

ELOCUTION, the utterance or expression of thought in reading and speaking, is an important part of a scholastic education, because of the constant need of such vocal utterance in the ordinary circumstances of both private and public life. The departments into which this subject naturally divides itself are the following: (1) Articulation, or the proper and distinct enunciation of the elementary sounds as usually combined in words; (2) Pronunciation, as dependent upon a knowledge of the various sounds represented by letters and their diverse combinations in words, and upon accentuation; (3) Emphasis, or the placing of a stress of the voice upon a particular word or words of a sentence, so as to bring out the meaning fully, and to give life and spirit to the delivery; (4) Voice inflections,—upward, downward, or waved, also as a means of giving a particular significance to words or sentences, and as auxiliary to emphasis; (5) Tones, or those variations of the voice in pitch, force, and quality, by which it is modulated to the expression of particular sentiments and emotions. (See READING, and VOICE, CULTURE OF.)

ELPHINSTON, James, a noted Scottish teacher and grammarian, was born in Edinburgh in 1721, and died at Hammersmith, near London, in 1809. For many years, he was the principal of a school at Kensington, near London, and was an intimate associate of Dr. Johnson, by whom he was greatly esteemed. During his residence in Edinburgh, he superintended an edition of the *Rambler*. His efforts to reform the orthography of the English language, by the introduction of phonetic spelling, made him noted, but brought upon him considerable ridicule. This system he carried out in a translation of Martial (1782), which Dr. Beattie called "a whole quarto of nonsense and gibberish;" and a further explanation of the system was given in *Propriety Ascertained in her Picture* (1786), which was followed by *English Orthography Epitomized* (1788), and *Fifty Years' Correspondence, Inglish, French, and Lattin, in Proze and Verse, between Geniusses ov boath Sexes and James Elphinston* (1794). He also published *Education; a Poem* (1763), and *English Grammar reduced to Analogy* (1765).— See CHAMBERS, *Biographical Dictionary of Eminent Scotsmen*; BOSWELL, *Life of Johnson*.

EMERSON, George Barrell, a distinguished American educator, born Sept. 12., 1797, in what is now Kennebunk, York Co., Me., then a part of the town of Wells. In 1817, he graduated at Harvard College; but while passing through his college course, he employed some of his winter vacations in teaching district schools, in which he gained a great deal of practical experience. After his graduation, he took charge of an academy in Lancaster, Mass.; and, from 1819 to 1821, he was tutor in mathematics and natural philosophy in Harvard College. In this position he had unusual advantages for culture, since he was associated with some of the most eminent scientific and literary men of that time, among whom may be mentioned Dr. Kirkland, Prof. Farrar, and Edward Everett, then Eliot professor of Greek. In 1821, he was selected to take charge of the English High School for boys, then called the English Classical School, which was established that year by the town of Boston, for the purpose of affording the means of a higher education to those who did not intend to pursue a college course. This was the first English high school established in the United States. Two years afterward, Mr. Emerson opened in Boston a private school for girls; and of this he continued to take charge till 1855, when he retired from the profession of teaching. This school was eminently successful; and Mr. Emerson showed, in the system of instruction which he pursued, the highest qualities of an earnest, conscientious, and skillful teacher. In 1830, he took an active part in the establishment of the American Institute of Instruction, before which he delivered, in 1831, a lecture on *Female Education;* and, in 1842, one on *Moral Education.* In 1843, he wrote *The Schoolmaster*, being part second of *The School and Schoolmaster*, the first part being written by the Rev. Dr. Potter, afterwards bishop of Pennsylvania. This work was composed on the invitation of the benevolent James Wadsworth, of Geneseo, N. Y., who paid the expense of printing and distributing gratuitously 15,000 copies of the work. Through means afforded by Mr. Brimmer, of Boston, a copy of this book was placed in each of the district schools of Massachusetts. The object of the work was to afford information of a practical character in regard to the various departments of elementary education, more particularly in respect to the organization, discipline, instruction, and management of common schools. The style in which it is written, its tone of sentiment, and the wisdom of its suggestions are worthy of its distinguished authors. Mr. Emerson served for two years in the School Committee of Boston, and, from 1848 to 1855, in the Massachusetts Board of Education. He was also a prominent member of the Boston Society of Natural History, and was appointed by Gov. Everett chairman of the commission to whom was intrusted the making of a zoölogical and botanical survey of the state of Massachusetts. He has published also a *Report on the Trees and Shrubs growing naturally in the Forests of Massachusetts* (Boston, 1846), and a *Manual of Agriculture* (1861).—See BARNARD, *Educational Biography* (N. Y., 1861).

EMINENCE COLLEGE, at Eminence, Ky., a non-sectarian institution, was founded in 1857 for the education of both sexes. It is supported by tuition fees. The buildings stand upon an elevated site, and the grounds are tastefully laid out and ornamented with evergreens and forest trees. The libraries contain about 1,800 volumes. The institution has philosophical and chemical apparatus and the beginning of a mineralogical and geological cabinet. There is a preparatory and a collegiate course, the latter comprising six departments; namely, ancient languages, mathematics, physics and chemistry, mental philosophy, Biblical literature, and modern languages. When a student has undergone a satisfactory examination in any particular department, he or she is entitled to a certificate of graduation in that department; and the possession of certificates from the various departments of the curriculum entitles the holder to the degree of A. B. The degree of B. S. is conferred on those students who complete the scientific part of the course, and have a certificate to that effect. There is also a special course for females similar to that of female seminaries, upon the completion of which a diploma is granted. The regular charge for tuition is $25 in the collegiate, and $20 in the preparatory course of twenty weeks. The daughters of all regular preachers, and of widows of limited means, are received at a discount of thirty per cent. Young men preparing for the ministry are admitted free of tuition. In 1874—5, there were 7 instructors, 126 matriculates (58 males and 68 females), and 125 *alumni*. The whole number of pupils, in 1875—6, was 190. S. G. Mullins was the president from September, 1857, to June, 1858, since which time W. S. Giltner has been the president.

EMORY COLLEGE, at Oxford, Newton county, Ga. under the control of the Methodist Episcopal Church, South. was founded in 1837. It is supported by tuition fees and an endowment of $20,000. The value of its grounds, buildings, and apparatus is $70,000. The institution has an academic and a collegiate department, the latter comprising a classical course of four years and a scientific course of three years. The degrees of Bachelor of Science and of English Literature, of Bachelor of Arts and Master of Arts, are the regular degrees conferred by this institution. The cost of tuition in the college is $25 for the fall term and $35 for the spring term; in the academic department, it varies per term from $15 in the primary classes to $31 in the academic classes. There is a fund of five thousand dollars, the interest of which is used in paying the tuition, and, in some cases, the board of young men of limited resources, who are preparing for the Christian ministry in the Methodist Episcopal Church, South. The libraries contain about 7,000 volumes; the mineral cabinet is one of the finest in the South. In 1873—4, there were 155 students, of whom 100 were of the collegiate grade, including 11 in the scientific course; and 55 were in the academic department; the number of *alumni* was 544. In 1875—6, there were 6 instructors and 155 students. The presidents of the college have been as follows: Rev. Ignatius A. Few, D. D., LL. D., 1837 to 1839; Rev. A. B. Longstreet, LL. D., 1839 to 1848; Rev. Geo. F. Pierce, D. D., LL. D., 1848 to 1854; Rev. A. Means, D. D., LL. D., 1854 to 1855; Rev. J. R. Thomas, D. D., 1855 to 1867; Rev. Luther M. Smith, D. D., 1867 to 1871; and Rev. O. L. Smith, D. D., the present incumbent (1876), appointed in 1871.

EMORY AND HENRY COLLEGE, at Emory, Washington Co., Va., founded in 1838, is under the control of the Methodist Episcopal Church, South. It has no endowment, and is supported by tuition fees, which, in the collegiate course, are $30 per term of 20 weeks. The value of its grounds, buildings, and apparatus is $125,000. The college library contains 4,580 volumes, and those of the two literary societies 9,000. The college has collections of minerals and fossils, philosophical and chemical apparatus, etc. It comprises preparatory courses, the ordinary collegiate course, and a scientific and a business course. In 1875—6, there were 6 instructors, 163 students (80 collegiate, and 83 scientific and preparatory), and 332 *alumni*. The presidents have been the Rev. Charles Collins, D. D., 1838—52, and the Rev. Ephraim E. Wiley, D. D., appointed in 1852 and still (1876) in office.

EMOTIONS are those conditions of the mind in which the sensibility is excited, so as to act upon the will, and with the tendency to outward manifestation in bodily acts. The difference between emotions and passions is rather quantitative than qualitative; the former, while characterized by an intensity of feeling, still leave a considerable scope for the exercise of reason and judgment; the latter, for the time being, disturb the equilibrium of self-consciousness, and produce a condition in which the mind is overmastered and controlled by the particular feeling, and is borne along by its force, helpless and suffering (hence the name *passion*, meaning *suffering*). Of this, we have illustrations in the effects of extreme anger, love, hatred, and revenge. Emotions are also to be distinguished from *sentiments*, the latter being to a greater extent based on mental discriminations, and more steady and durable in their nature. Thus, he who has cultivated the sentiment of patriotism, cannot but feel an emotion of joy at a victory gained by his country over her enemies. Emotions are likewise to be distinguished from *feelings*, or the immediate sensations of the physical organism, giving rise to mental perceptions, or to bodily pleasure or pain. The nature of children is more emotional than that of grown persons, because the restraining principle of the mind is less active, and the sensibility more fresh and more acute. This is particularly true of certain kinds of temperament and mental constitution. The office of education is to recognize every principle of the human being, and to employ it or appeal to it in the educative processes. An emotional nature should be cherished; inasmuch as one who is deficient in this respect is apt to be cold, selfish, and unsocial. The emotions are not only compatible with, but necessary to, the best elements of man's moral nature; and the educator should strive to connect them with moral motives. Habit has much to do in laying the foundation of a rich emotional nature in the mind of a child; but example, and the natural sympathy with the mind of an educator thus cultivated and enriched, has very much more. To cultivate the emotions there must be means for their exercise. The attempt to awaken emotion in the minds of children by mere sentimentality is futile and ridiculous. Stirring stories of heroism, endurance, patriotism, generosity, self-denial, filial affection, etc. will awaken corresponding emotions; and when properly applied constitute a means of emotional culture; but youth should, as far as possible, be permitted to yield to the natural emotions to which the ordinary circumstances of their lives give rise; they should witness emotion in others, under restraint, but still expressed; and by imitation, as well as instinctive impulse, be habituated to ardor in their feelings toward all that is beautiful, true, and good in natural objects, historical incidents, or the conduct of those with whom they meet in their daily lives.

EMPIRICAL METHODS, those methods of instruction or education which are based not on theoretical principles, but on the effects of practical operations as learned by experience. Hence the term (from Gr. *ἐμπειρία*, experience). When the application of scientific methods, or those derived from general principles, is possible, the use of empirical methods becomes a cause of reproach, and is to be condemned. The science of education is, however, too unsettled and incomplete to justify such condemnation, except to a limited extent. Methods that have stood the test of actual experiment, and have proved effective, are not to be discarded merely because the principle underlying them is not understood, or because they seem to contradict some favorite theory. Such experimental processes are the source of much valuable experience, and the facts thus obtained should be generalized so as to supply additional scientific principles, or correct those already deduced. In this way, the practical experience of educators may be employed to improve and extend the science of education. On the other hand, it is undoubtedly true that teachers are too apt to follow empirical methods blindly, without concerning themselves with principles. The complaint is often and justly made that education is not scientific; and, that, consequently old methods and processes are often employed, when the circumstances render them entirely inapplicable. This would naturally be the result of adhering to empirical methods, since principles alone can guide to a just discrimination as to practical processes. The "rule of thumb" may answer when the operator is confined to a very narrow sphere of his art, and is never obliged to depart from it; but it is entirely inadequate to grapple with the difficulties presented in a varied and enlarged sphere of practical effort, whatever the art or profession may be. This is particularly true of education, since the elements with which it has to deal are as innumerable in their combinations as the phases of human character. In proportion as education emerges from this condition of empiricism, and assumes a settled scientific status, its practical operations will rise to the dignity of a profession, and those engaged in it will receive the consideration which appertains to the professional character.

EMULATION (Lat. *æmulatio*, from *æmulus*, a rival), the desire to excel, is a principle of action which has had a very general application in practical education, being one of the most common incentives brought to bear upon children and youth to induce exertion in study. The various systems of merit marks, prizes, etc., are based upon this principle, inasmuch as they definitely recognize and reward superiority or excellence.

Scarcely any subject has been more thoroughly discussed than the propriety of resorting to emulation as a school incentive. On the one hand, it has been held that the human mind, particularly in its immature state, needs the stimulus of secondary motives to awaken its dormant energies, especially for the accomplishment of tasks in which it takes only an imperfect interest. Naturally, children are but little prone to study, their fondness being rather for active sports and amusements; and, hence, the awakening of an interest in the studies themselves, while an important object of the teacher's efforts, cannot be depended upon to incite the pupil to continuous industry. While there are some minds and temperaments that feel an almost innate desire for the acquisition of knowledge, and hence a love of study, on the other hand, the great majority of children have no such desire until it is engendered by the force of secondary motives, that is, by holding out inducements to study based upon the attainment of things in which they do take an interest. All children are, more or less, prone to emulation; they love to excel others, particularly in things that bring commendation and honor, in this respect resembling those of maturer years; for this principle of action has been recognized as leading to eminence in every department of human effort. Thus Cicero says, "Honos alit artes omnesque incenduntur ad studia gloria, jacentque ea semper quæ apud quosque improbantur." Hence, in schools and colleges, emulation is an important and valuable incentive which the educator may, by no means, cast aside. Of course, it is not to be allowed to degenerate into personal strife, animosity, or jealousy; nor is it to be indulged in such a manner as to obliterate the pupil's real interest in the study pursued. It is always to be impressed upon the student's mind that he is working in a good cause, and that he should strive to attain to the highest possible degree of excellence in it,—higher, if he can, than that which he sees has been attained by any of his fellow students. Thus what others achieve becomes the measure of what can be done by him if he exerts himself to the utmost, and also the standard beyond which he is to go in order to obtain the prize of excellence. Whewell, in *English University Education*, remarks, "A combination of direct and indirect instruction appears to be desirable. The love of knowledge, and the love of distinction with the fear of disgrace, are the two main springs of all education, and it does not appear wise or safe to try to dispense with either of them." Contention, personal rivalry, and envy need not, it is said, be the offspring of a noble emulation; and no other emulation than this should be encouraged or permitted by the educator.

On the other hand, an appeal to emulation as a school incentive, has been either wholly or partly condemned by a numerous class of educators of the highest distinction. Dr. Dwight said, "Emulation I condemn. I think it is a wicked passion, and the cause of great evil. I wish to see all actuated by this desire—to do the best they can for the glory of their Creator." But he also said, "On this subject I have often reflected. I have attended to all the arguments; and, for aught I know, impartially. I would carefully avoid emulation; I would get along without it as far as possible, and as long as I could; but how we can prevent its existence entirely I do not know." Miss C. E. Beecher said, "Emulation always affects those the most, who least need excitement, and leaves unaffected those who most require it. Another evil is, that it renders those who come under the influence of this principle, less susceptible of better influence." (See *Annals of Education*, vol. III., p. 28.) This writer defines emulation as the "method of exciting others to exertion by rewards and punishments based on comparative excellence," or "giving rewards to those who are decided to be better than their companions, in any of those particulars for which rewards are offered." S. R. Hall, in *Annals of Education*, vol. II., thus sums up the results of his experience in employing emulation as a school incentive: "(1) A small part of the scholars applied themselves to their lessons with great correctness; (2) They aimed to get the lessons for recitations, but thought little of learning them for the purpose of applying knowledge to the practical purposes of life; (3) Efforts were relaxed whenever the prospect of 'beating' became faint; (4) Those near the head were usually jealous of each other, and not unfrequently exhibited envy and ill-will; (5) Those often obtained the prize, who were the least deserving of it; (6) Those who had become considerably acquainted with a study had greatly the advantage of others in their class, who had enjoyed less opportunity; (7) Parents were frequently led to take the part of their children, and to believe they were treated unfairly." Cowper, in *Tirocinium, or a Review of Schools*, gives the following condemnatory description of emulation:

"A principle, whose proud pretensions pass
Unquestioned, though the jewel be but glass—

That, with a world not often over-nice,
Ranks as a virtue and is just a vice;
Or rather a gross compound,—justly tried,—
Of envy, hatred, jealousy, and pride—
Contributes most, perhaps, to enhance their fame;
And *Emulation* is its specious name."

Most of the severe condemnation passed upon emulation seems, however, to be based upon a definition of it that includes too much of personal rivalry, of the selfish desire for reward, and of the mere craving for approbation, the natural concomitants of which are "envy, hatred, and jealousy;" whereas, the desire of attaining excellence in worthy things does not necessarily include these baser motives, although, it must be confessed, the tendency is in that direction unless it is carefully regulated. "Emulation," says a distinguished educator, "is a generous ardor which nature herself kindles and nourishes. There may be minds so indolent, so unhappy, as never to have warmly felt its influence. There may be whole schools in which, thanks to bad organization, the indifference of the master, or other circumstances, emulation is only weakly manifested; but in the school, as elsewhere, it exists naturally, and there is less need of exciting it than of directing it aright." In this, as in most other respects, the educator has great need to watch the indications of character in his pupils. Some minds, largely affected by approbativeness, or having excessive self-esteem, may be greatly injured by a system that tends to foster these qualities; others may need the incentive of emulation to bring out their powers. The prevailing system of treating all minds and dispositions alike must often do irreparable injury. "There is no ground," says Currie, in *The Principles and Practice of Common-School Education*, "for confining the application of this principle so exclusively as we do to the work of instruction. It is true that, in school, intellectual occupation is the chief work of the pupil, and that, therefore, to it there must be the most frequent occasion of applying the principle. Nevertheless, the teacher is supposed to have in view the moral training of his pupils, whilst conducting their instruction; and if he is only impressed with a due sense of its paramount importance, he will find many opportunities of directing their attention to acts of virtue performed under their observation, and of exciting a spirit of emulation in this sphere of the same active kind as that by which he helps forward their intellectual work. The application of this principle to moral actions ought to vindicate it against the indiscriminate condemnation with which we may be tempted to visit it, when we think only of its extreme exhibition in the acquisition of knowledge."

ENCOURAGEMENT, as an educational incentive, is of indispensable importance in dealing with a certain class of minds, particularly with those characterized by an excess of caution, timidity, and diffidence. (See DIFFIDENCE.) Many teachers repress the exertions of their pupils by failing to discern their true character, so as to be able to ascertain the amount of effort they may have put forth in order to accomplish an assigned task, or to avoid a temptation to do wrong. Adopting an arbitrary standard, they sometimes condemn alike all who fail to attain it, making no allowance for diversity of talent, opportunity, or the power of will; whereas the true test of a pupil's merit is not the accomplishment of the task, but the exertion put forth and the self-control exercised in the endeavor to comply with the teacher's precepts or directions. Encouragement consists in adjusting the standard of success to the peculiar circumstances and traits of the pupil. If the latter is dull, indolent, self-indulgent, feeble in will, and yielding easily to temptation, the educator who recognizes these traits, accepts with satisfaction the feeblest efforts at amendment which he sees have been put forth, and by judicious commendation induces stronger and more persistent ones, until the foundation of moral or intellectual strength has been safely laid. Timid children must be encouraged to lay aside their fears by being shown that they are groundless. They must not be repressed by harsh words of censure, or by those forms of punishment which should be the exclusive penalty of willful wrong-doing. On the contrary, they should be made to feel that, even if they have failed, they have won their teacher's approving smiles by their honest efforts. All the various forms of encouragement, within the power of a teacher of skill and experience, will find occasions for employment in dealing with the endless diversities of character presented by the pupils of a large class or school. Some minds, on the other hand, need rather urging than gentle encouragement; and the latter, in the form of excessive praise, to talented pupils is often a means of flattering their vanity, and thus operates as a kind of moral poison, destroying the force of every true stimulus to activity. The following are the suggestions of practical educators: "Encouragement inspires confidence, and children, more than others, need it. Let it be given in all cases where this can be honestly done. To a want of this in the discipline of classes are to be ascribed the timidity and reserve so often manifested among pupils by a hesitating manner, a low voice, and a tone of inquiry in response, especially to strangers. A proper degree of encouragement renders them confident and spirited, eager to tell what they know, and in an audible tone of voice. Encouragement has a peculiar influence in promoting both mental and moral improvement."—(*How to Teach*, N.Y., 1873.)

ENGLAND, an important European country, forming with Wales the southern portion of the island of Great Britain, and being the principal member of the United Kingdom of Great Britain and Ireland. It has an area of 58,320 sq. miles, and a population, according to the census of 1871, of 22,712,266. On the basis of the official lists of births and deaths, the population, in 1875, was estimated by the registrar general at 23,944,459. The last official census contains no information of the number of persons belonging to the established Church of

England and other religious creeds. The population connected with the established church is variously estimated at from 55 per cent (Martin's *Yearbook*) to 77.8 per cent (Ravenstein's *Denominational Statistics of England and Wales*). The Roman Catholics are estimated at 4.6 per cent of the population.

Educational History.—The history of education in England is a subject which deserves better and fuller treatment than it has yet received. Probably, some system of education existed in Britain, or at least in the southern portion of it, before Julius Cæsar visited its shores. After the Romans had resolved on making Britain a permanent addition to their empire, education was one of the means which they employed to render their possession stable. Tacitus tells us that Agricola had the sons of the chief men instructed in the liberal arts, and the result was, that the Britons showed great ability, and devoted themselves with ardor to the new pursuits. The Roman schools probably remained in existence after the Romans abandoned the island. At any rate, when Charlemagne conceived the great idea of spreading knowledge among all classes, it was in an Englishman, Alcuin, that he found his principal guide, as well as his own instructor. It is well known that Alfred the Great did much for the spread of learning and for the English universities, and many of the grammar schools were founded in the middle ages. Carlisle school, for instance, was established in the time of William II.; Derby, about the year 1160; Salisbury, in 1319; and Winchester, the oldest of the so-called nine Public Schools, in 1387. These schools were generally connected with cathedrals or monasteries. Their object was mainly to train either for the priesthood or for some lower service in the church, as for the choir. Speaking generally, the subjects of instruction were grammar and music. Many of these schools were reorganized at the Reformation, and very many additional ones were formed. The range of instruction was considerably widened, and most of them were free; but they helped to educate only a small portion of the community; and, while the universities and a few of the schools rose to eminence, most of these schools were neglected. In process of time, too, the endowments of these schools were greatly abused; and when a commission was appointed to inquire into their condition (December 28., 1864), matters were found in an exceedingly unsatisfactory state. The commissioners excluded from their examination the nine schools which had been already reported on. The number of schools which came under their observation, and which they speak of as endowed, was about 700; but they examined 82 other schools doing similar work, so that the entire number was 782, in regard to which they make the following statement: "The aggregate net income from endowments of the grammar and other secondary schools included in our list is £195,184. The gross income of the schools and charitable foundations, including grammar schools, is £336,201. The annual value of exhibitions to which the schools have a claim, but which are not included in these amounts, is at least £14,264. The total number of towns of more than 2,000 inhabitants, according to the census of 1861, which have endowments for a grammar or other secondary school, is 304. Many of these endowments are now applied to primary schools only. There are 228 towns of that size without any such endowment."

The most singular feature in the results of the inquiry was, that, in many places, the endowments had come to be regarded and treated as private property. The school-master often drew the income without having a single pupil, and many school-masters seemed to feel that the fewer scholars they had, the more comfortable would it be for themselves. We quote some out of the very numerous examples which the Report furnishes: "At Bosworth (net income of school £792 a year), the head-master taught three boarders and no others; the under-master only attended when he chose; the usher taught an inferior village school. Thame had two masters receiving £300 between them, one of whom had a good house also. Mr. Fearon found one boy in the school. A private school close by had 80 boarders and 40 day-scholars, paying higher than the grammar school fees. At Witney, the head-master contented himself with teaching Greek to one boy. Reading had three scholars, and there was no hope of the school's reviving under the then master. Aynhoe had five scholars, the master having once had a flourishing school at Banbury, and having come to Aynhoe for retirement. North Walsham (£266) had only 11 pupils, and 'the whole place wore an aspect of decay and desolation,' but the master objected to a new scheme's being procured."

In consequence of this report, an executive commission was appointed to prepare schemes for the improvement of these endowed schools, and to see them carried into effect. This commission worked with great vigor, and naturally aroused the opposition of those who looked upon the endowments as belonging to them by vested right. The present government listened to these complaints and introduced an Amended Endowed Schools Bill, which transferred the power of the commission to the Charity Commissioners. But the personal element in the administration was not greatly altered, and the Charity Commissioners are going on with the work of reformation in an earnest spirit. There was much need of it. These schools were the only endowed institutions which the country possessed for secondary education. In consequence of their failure to do this work, proprietary and private adventure schools had arisen in great numbers. The private adventure schools were for the most part boarding-schools. They were conducted by a single person as a money speculation; and, though some of them were admirably managed, most of them were utterly unfit to educate. The Yorkshire schools have been described with wonderful humor by Dickens in his

Nicholas Nickleby; but schools equally bad existed over the whole country, and some exist to this day. The proprietary schools were established by a number of gentlemen who combined together in their own districts to erect, maintain, and manage them. They were much better, on the average, than the private adventure schools; but many glaring defects were brought to light by the inquiry of the Endowed Schools' Commission.

These were the means which England had for her secondary education. They were marked by the two following characteristics: (1) Whether endowed, proprietary, or private, they had no connection with the state; the state did not control, examine, appoint masters for, or in any way interfere with, or take the slightest superintendence of, these schools; (2) They were to a large extent boarding schools. The boys left their parents' home at an early age, and lived in houses where only boys and male masters lived; these schools were thus essentially monastic institutions, and the public opinion prevalent in them was the opinion upheld by the majority or by the strongest of the boys. Hence an inordinate love of outdoor games and such peculiar customs as that of fagging. These peculiarities still attach to the schools. The state has interfered with the endowments, and claimed, in consequence of these, the right to settle the nature of the governing bodies; but, after having once settled this, the state will withdraw and leave the schools entirely in the hands of the managers.

At the Reformation, no provision was made for the education of the masses, and nothing was really done for them until the end of the last and the beginning of the present century. A very common idea prevailed, that it was better for the working classes to be ignorant. They would be more contented, it was argued, and would confine themselves to their ordinary toils, deriving ample happiness from these in their humble sphere, if they could neither read nor write, and knew little or nothing of theories of government, laws of trade, and the movements going on in foreign countries. Knowledge would only make them restless. This feeling has continued down to the present day, though it is not often that utterance is given to it. The first vigorous effort made to educate the masses was due to the zeal of Robert Raikes (q. v.), who, in 1780, established Sunday schools. The manner of the commencement of these is noteworthy. The movement arose out of religious feeling; and this has characterized English education in an eminent degree. In other countries, education has gradually become a subject of interest to all, and governments, especially, have deemed their interference essential. In England, on the contrary, the effort to educate has mainly arisen with the churches, and the state has, even to this day, obtained only a subordinate position in the management of the schools. The entire history of the question will bring out this curious aspect of English education. It is certainly brought out prominently in the next stage. Lancaster (q. v.), a man of strong impulse and generous heart, was eager to educate the masses. He made the experiment, and was well supported in it by the community; but his success soon awoke suspicion. Lancaster was a Quaker, and solved the religious difficulty by confining his religious instructions to the reading of the Bible. Some saw in this a secret plot to undermine the Church of England; and an effort, they felt, must be made to repel this insidious attack. Lancaster had gained distinction by the adoption of the monitorial system. Another educationist, Dr. Bell (q. v.), laid claim to having practiced this system before Lancaster, and a furious dispute arose on that question, but sides were formed according to churches. Dr. Bell was a clergyman of the Church of England, and those who were afraid for the safety of that church naturally looked to him to organize an education which should effectually oppose the Lancasterian movement. Out of this antagonism arose two societies,—the one, the British and Foreign Society, in 1808; the other, the National Society, in 1811. The National Society was formed to establish schools in which the principles of the Church of England should be taught, and over which the church should exercise control. The British and Foreign Society followed Lancaster's system of teaching religion from the Bible, and the Bible only. These two societies proved themselves active in the work which they undertook, and schools arose in all parts of the land. But they were utterly unable to cope with the terrible destitution that prevailed, and the number of neglected and uneducated children was enormous. The religious difficulty, however, always intervened to prevent legislation. The House of Commons was so deeply impressed with the importance of the subject, that it passed Mr. Whitbread's Parochial Schools Bill in 1807; but the bill was thrown out in the House of Lords, and none was more earnest in his opposition than the Archbishop of Canterbury. Brougham was the next statesman that attempted to grapple with the question. He made two distinct efforts, one in 1816, and one in 1820. Brougham's ideas were comprehensive. He wished to see a national system of education, embracing the universities at the one end, and at the other, parochial schools which should furnish an elementary education fit for the humblest of the people. But, though he labored with unremitting toil and with great ability, Parliament did nothing. Meantime, outside of Parliament, there was considerable agitation in regard to the subject, mainly under the leadership of Brougham. Infant schools were established. The Society for the Diffusion of Useful Knowledge ordered the circle of Readers. The Central Society devoted its energies to the circulation of sound opinions on education, and gave information as to the progress and methods of education in foreign countries. It was not, however, until 1833, that Parliament was induced to do any thing for education, when a grant of £20,000 was voted for distribution between the National Society and the British and Foreign Society, to aid in the erection of school buildings. During this period, and for some time subsequent to it, various inquiries were made into the educational condition of the laboring classes, and the results were found to be unsatisfactory in the highest degree. The results of the inquiry carried on by the committee of education of 1838 were as follows: (1) That the kind of education given to the children of the working classes was lamentably deficient; (2) That it extended, bad as it was, to but a small proportion of those who ought to receive it; (3) That, without some strenuous and persevering efforts on the part of the government, the greatest evils to all classes might follow from this neglect. The time was ripe for further progress; and, accordingly, in 1839, the liberal government appointed an educational committee of the Privy Council; and the House of Commons voted a sum of £30,000, to be distributed by this committee. With this sum, little could be done; but, at any rate, there was something like a government department for education. The best thing the committee did was to appoint Mr. James Kay, afterwards Sir James Kay Shuttleworth, to be their secretary. He was pre-eminently fitted for the peculiar position. The committee arranged a system of inspection; and if nothing more was done, at least the true state of matters was ascertained. The committee also attempted to found a training college for teachers, but they were baffled in this effort by the religious difficulty. Sir J. K. Shuttleworth resolved to set up such an institution without the aid of government, and he succeeded. The various religious bodies followed his example; and, "within six years, fifteen training schools were founded." The result is, that, up to this day, all the training schools are under the control of the churches; but one body, the Independents, took no distinct part in the work of education, except in founding and maintaining a training school for teachers; namely, Homerton College. In 1846, the Committee of Council made a still greater advance. A elaborate system of inspection, with grants, was established, much encouragement was given to pupil-teachers, and the profession of teacher rose in public estimation. But each year, under this system, the grants increased. They amounted, in 1846, to £100,000; in 1859, they had increased to £836,920; and there appeared to be no limit to this increase. A commission of inquiry was again appointed. Investigations of a most thorough nature were prosecuted, and the report was presented in six volumes. Mr. Lowe was at this time vice-president of the Committee of Council on Education, and was resolved to be economical. The plan which suggested itself to him as the most likely to serve the purpose, was one which he had seen employed on the convicts in Australia. The grants had been given to schools, before this time, on account of general efficiency. The inspector reported on the entire appearance of the school; note was taken of the discipline, and of the success of the pupils in all departments; but especial praise was given when a school seemed to be imparting a good intellectual and moral training. Mr. Lowe thought that government should pay only for teaching the three R's; and the plan he proposed was to devise various standards in reading, writing, and arithmetic, to suit the progress which scholars might be supposed to make in one year, and to assign a money value for each of these subjects, paying to the managers of the school a sum of money according to the number of passes which the pupils had gained in the examination. This plan was followed by evil consequences. The higher branches were neglected, the profession of teaching was lowered, and the instruction became mechanical, and passed into mere cram for the purpose of the passes. The one good feature in the plan was individual examination—a feature which had existed to some extent before, and could well exist, if the plan were given up. The essential peculiarities of this plan still exist, but the details have been modified. Every year sees changes in the Code, the name given to the document which contains the regulations in regard to the standards and the passes. The higher subjects have received recognition, and various other improvements have been introduced; but the code method must be continued as long as the religious difficulty bars the way to a completely national system. An effort in the direction of a national system was made by Mr. Forster, in his bill of 1870. This act contains provisions by which local school boards may be established, rates may be imposed, and compulsory clauses enacted. It prescribes that the religious instruction shall take place at the beginning or end of the school day, and that no catechism or religious text-book shall be used. It was thus only a half measure. The grants were continued to the denominational schools. The establishment of school boards, the imposition of rates, the employment of compulsion, and the teaching of religion, were all to be settled by the special localities. Many localities have taken advantage of the powers thus granted them, and some, such as the London school board, have done incalculable good; but there has been considerable rivalry between the school boards and the churches, and much display of bitter religious animosity.

The *elementary education act* of 1873 was designed to supplement, by some essential provisions, that of 1870; but more important changes have been introduced by that of 1876. The compulsory attendance provisions are strengthened, the law declaring that "it is the duty of the parent of every child to cause such child to receive an efficient elementary education"; and, not only, as in the previous act, are the school boards vested with the power to make *compulsory by-laws*, but provision is made for the extension of this authority by means of school-attendance committees, to be appointed, in a borough, by the town council, and, in a parish, by the guardians. The act of 1876 also provides for the establishment of *day industrial schools*, in which elementary education, combined with industrial training may be carried on, the pupils being supplied with one or more meals each day. This is designed to encourage and facilitate the education of a large class of neglected children whom the previous provisions did not succeed in reaching. A new Code of Regulations has been issued in pursuance of this act.

The following table, compiled from official returns relating to the elementary schools of England and Wales (including those of the Isle of Man), gives a view of the progress of education between the years 1864 and 1874.

Year	Number of schools inspected	Number of children that can be accommodated	Average number of children in attendance
1866......	7,134	1,510,721	919,922
1867......	7.601	1,606,409	978,392
1868......	8,051	1,724,569	1,060,082
1869......	8,592	1,888,416	1.153,572
1870......	8,986	1,950,641	1.255,083
1871......	9,521	2,092,984	1,345,802
1872......	10,751	2,397,745	1,445,326
1873......	11,951	2,665,467	1,570,741
1874......	13,243	2,982,981	1,774,143

Elementary Education.—National System.—Appropriations are annually made by parliament for "public education in England and Wales"; and the grants thus made are administered by the Education Department, which consists of the Lords of the Committee of the Privy Council on Education. The object of the grant is not to make full provision for the support of schools, but to aid local exertion, under certain conditions, to maintain (1) elementary schools, and (2) training colleges for teachers. Public elementary schools must be conducted according to the following legal regulations: (1) No religious observances, or attendance at any church or Sunday-school, must be imposed as a condition of admission to the school; (2) Religious observances, and instruction in religious subjects, must be either at the beginning or at the end of the school session, and must not be compulsory; (3) The school must be open at all times to the visits of the government inspectors; but the latter are not permitted to take any cognizance of religious instruction. Unless the school is conducted according to the legal provisions, it cannot obtain any portion of the parliamentary grant; and no grant is paid to any school, except on a report of an inspector. These inspectors are appointed by the Crown, on the recommendation of the education department. In order to obtain participation in the grant, the school must be placed on the list for inspection, after application to the Department by the school board or other managers. The school premises are required to be "healthy, well-lighted, warmed, drained, and ventilated, properly furnished, supplied with suitable offices, and to contain, in the principal school room, and class rooms, at least 80 cubical feet of internal space, and 8 square feet of area, for each child in average attendance." The principal teacher must be certificated. If, on the inspector's report of any school, there appears to be any serious objection, the grant may be withheld; but a second inspection, by another inspector, is always made. There must be not less than 400 morning and afternoon sessions of the school during the year. The grant is based on the average attendance and the proficiency of the pupils in certain branches, that is, so much (4 s.) for each pupil in attendance, and so much for each *pass* in reading, writing, arithmetic, geography, grammar, history, etc. Whether the mode of examination shall be oral or written, is left to the discretion of the inspector. The girls must be taught "plain needle-work and cutting out" as a regular branch in the day schools; and to show the proficiency acquired, specimens must be worked on the day of the inspection. The evening schools must hold at least 45 sessions during the year, and are similarly inspected and paid for. Attendances must not be reckoned for any pupil in a day school, under 3 years of age or above 18; or, in an evening school, under 12 or above 21. The *standards* are six (from I., the lowest, to VI., the highest), and minutely prescribe the degrees of proficiency to be attained in reading, writing, arithmetic, grammar, geography, and English history. Reductions are made in the grants for various reasons, including an unfavorable report of the inspector, or the want of a sufficient number of *pupil-teachers*, who are prescribed as follows: for the first 60 pupils, none; for any number between 61 and 100, inclusive, one; between 101 and 140, two, etc. The recognized classes of teachers are three: (1) certificated teachers; (2) pupil-teachers; (3) assistant teachers. Certificates are obtained on examination, which is open to (1) students who have resided for at least one year in training colleges under inspection, or (2) candidates who are upward of 21 years of age, and have either completed satisfactorily an engagement as pupil-teacher, obtained a favorable report from an inspector, or served as assistants, for at least six months, in schools under certificated teachers. These examinations are held, in December of each year, at the several training colleges under inspection, and "at such centers as may be necessary"; and the list of successful candidates is published. Each certificate records the relative proficiency of the candidate receiving it. Candidates must, after examination, serve as teachers under probation, before receiving certificates. The certificates are of three classes; and no certificate above the second class is originally issued; the third (lowest) includes special certificates for teachers of infant classes. *Good service* alone entitles any teacher to a certificate of the first class. Those of the second class remain in force ten years. Pupil-teachers are boys or girls employed to serve in a school, under certificated teachers. They must be at least 13 years of age; and not more than four must be engaged for every certificated teacher. At the close of their engagement, these pupil-teachers may become assistants, or they may be examined for admission into a training college, or be provisionally certificated for immediate service in small schools. — A *training college* includes both a "college for boarding, lodging, and instructing candidates for the office of teacher in elementary schools," and a "practicing school, in which candidates may learn the exercise of their profession". Annual grants are made to these institutions on the same conditions as to public elementary schools. Each college is entitled to £100 for every master, and £70 for every mistress, who, after two years' training, completes the prescribed period of probation, and becomes qualified to receive a teacher's certificate, or who has completed a like period of good service as an elementary teacher in the army, royal navy, or in the poor-law schools, certified industrial schools, or certified reformatories. Examinations for admission are held annually, and are open, without restriction by the education department, to pupil-teachers, and others who intend *bonâ fide* to adopt and follow the profession of teacher in elementary schools. All candidates, before admission, must be passed by the medical officer of the college, who must certify that they are in good health and free from serious bodily defect or deformity. If candidates are admitted in violation of the rules, the education department refuses to grant them certificates.—Pensions are granted to teachers in certain cases, the maximum number and value receivable at one time, in England and Scotland together, being 270, as follows: 20 of £30 each; 100 of £25 each; and 150 of £20 each; all of which, with special gratuities and donations, amount to £6,500.

Besides the schools that receive grants of public money, according to the Code, there are schools that are inspected, but receive no grant, and private schools, the latter, however, rapidly diminishing in number. The school boards, constituted under the act of 1870, consist of not less than 5 nor more than 15 members, elected, in the boroughs, by the persons on the burgess roll; in a parish, by the rate-payers, except in the metropolis. Every voter may give all his votes to one candidate, or distribute them among the candidates as he thinks fit. Boroughs and parishes may be united by the education department so as to form a *united school-district*. The societies which have the charge of the inspected schools, besides the school boards, are the following: (1) The British and Foreign School Society, supported by Christians of all denominations; (2) The National Society for the education of the poor in the tenets and observances of the established church; (3) Diocesan Boards of Education which, in connection with special dioceses, look after the education given in church schools; (4) The Church of England Education Society, consisting of members of the Evangelical party, which gives aid to schools, but does not establish any; (5) The Committee appointed by the Roman Catholics to watch over the education of the poor; (6) The General Committee on Education, appointed by the Wesleyans, for the first time, in 1840. There are other societies of less note, such as the Home and Colonial Society, the London Ragged School Union, the London Committee of the British Jews, and the Voluntary Society. The education furnished by the school-board schools appears to be the best, the reports showing, on the whole, a larger percentage of passes in the standards. The teachers of the board schools are better paid, and of superior efficiency. The income of all the schools, except the board schools, arises from the following sources: (1) voluntary subscriptions; (2) fees; (3) government grants according to the Code. In the board schools, instead of the voluntary subscriptions, there is the rate. Fees and government grants are common to all.—There are also schools for special classes: (1) Ragged Schools, (2) Industrial Schools, (3) Reformatories. Ragged schools are supported entirely by voluntary contributions, and consist, as the name denotes, of neglected, but not criminal children. The industrial schools give both intellectual and moral training and instruction in the industrial arts. These schools are subsidized by the government. Reformatories are largely supported by the government, being intended for juvenile offenders. There are also schools connected with work-houses, schools for the children of soldiers, and training ships, in which boys are trained for marine service.—Special notice should also be taken of the Science and Art Department, which, under the fostering care of the late Prince Albert, has done so much to spread a knowledge of science and art over the country. Art schools have been established in various cities, and prizes offered and awarded. Examinations in science may be held in any town in which a committee can be formed; certificates are granted to those who pass, and the teacher receives a sum of money for each pupil that passes.

Educational Statistics.—The following statistics, for the year 1875, show what progress has been made in national elementary instruction:

EXPENDITURE FROM EDUCATION GRANTS.

(TABLE A)—*Classified according to Object of Grant.*

	£	s.	d.
1. In annual grants to elementary schools under the new code, viz.:			
For day scholars	1,074,411	1	3
For evening scholars	18,967	17	5
2. Grants to school boards	317	10	11
3. Toward the building and furnishing of school premises	34,491	13	2
4. In grants to training colleges	94,376	19	4
5. Unexpired pensions	438	15	0
6. Administration:— £ s. d. For inspection..79,527 18 10 For office and contingencies.46,613 11 7	126,141	10	5
7. Organization of districts, etc.	7,601	11	11
Total	1,356,746	19	5

((TABLE B)—*Classified according to Denomination.*

	£	s.	d.
On Schools connected with Church of England	822,565	9	5
On British, Wesleyan, and other Schools	235,887	6	6
On Roman Catholic Schools	73,881	19	5
On Board Schools	90,231	10	10
On Parochial Union Schools	120	0	0
Administration (as in Table A)	126,141	10	5
Organization of districts, etc	7,601	11	11
Grants to School Boards	317	10	11
Total	1,356,746	19	5

The number of certificated male teachers in the schools receiving grants was 10,221; of female certificated teachers, 11,731; of male assistant teachers, 872; of female assistant teachers, 1,549; of male pupil-teachers, 10,886; and of female pupil-teachers, 18,466. The number of schools actually inspected during the year ending August 31., 1875, and the number of pupils, according to the denominations that educate, are given in the following tables.

NUMBER OF SCHOOLS.

DENOMINATIONS	Day Schls.	Night Schls.	Total
Schools connected with National Society or Church of England..	9,449	17	9,466
British Wesleyan and other schools not connected with the Church of England............	2,034	52	2,086
Roman Catholic Schools.........	598	—	598
School-Board Schools............	1,136	4	1,140
Total..............	13,217	73	13,290

NUMBER OF PUPILS IN AVERAGE ATTENDANCE.

DENOMINATIONS	Day Schools		
	Boys	Girls	Total
Schools connected with National Society or Church of England....................	643,971	531,318	1,175,289
Brit. Wesl. and other Schools not connected with the Church of England.........	190,802	137,378	328,180
Roman Catholic Schools......	53,074	53,352	106,426
School-Board Schools.........	128,636	98,649	227,285
Total.................	1,016,483	820,697	1,837,180

	Night Schools		
	Males	Females	Total
Schools connected with National Society or Church of England....................	23,418	5,081	28,499
Brit. Wesl. and other Schools not connected with the Church of England.........	10,207	2,707	12,914
Roman Catholic Schools......	1,737	1,136	2,873
School-Board Schools.........	3,235	861	4,096
Total.................	38,597	9,785	48,382

The following table gives the number of pupils on the school registers, and the number of pupils for whom accommodation is provided at 80 cubic feet of internal space, and 8 square feet of area per pupil:

DENOMINATIONS	Scholars on the school registers	Scholars that may be accommodated
Schools connected with National Society or Church of England..............	1,735,895	2,011,434
British Wesleyan and other schools not connected with Church of England.	492,588	571,582
Roman Catholic Schools...	163,850	189,236
School-Board Schools......	351,967	387,227
Total............	2,744,300	3,159,479

Of the pupils, 64 per cent attended the National Society schools; 18 per cent, the British Wesleyan schools; 5.5 per cent, Roman Catholic schools; and 12.5 per cent, the Board schools.

The pupils on the school registers were divided in regard to age as follows:

AGE	No. of scholars	Per cent
Under 3 years................	19,358	0.70
Between 3 and 4 years....	111,409	4.06
" 4 " 5 "	232,630	8.48
" 5 " 6 "	297,134	10.83
" 6 " 7 "	323,464	11.79
" 7 " 8 "	320,442	11.68
" 8 " 9 "	324,901	11.74
" 9 " 10 "	315,496	11.49
" 10 " 11 "	292,724	10.67
" 11 " 12 "	242,042	8.82
" 12 " 13 "	172,449	6.28
" 13 " 14 "	65,307	2.38
Over 14 years................	26,944	0.98

London School Board.—Of all the school boards created by the act of 1870, that of the metropolis had the heaviest task imposed upon it; and it has, accordingly, accomplished the greatest results. The first board (elected Nov. 29., 1870) contained many eminent members, among them Prof. Huxley, and Dr. Elizabeth Garret-Anderson. The School-Board district embraces a population of 3,400,000, out of 4,200,000 people inhabiting what is now called *Greater London*, which covers 698 square miles. The number of school-districts is 10, which are represented in the board by 49 members, elected by ballot. The population of London, in 1871, was 3,265,005, of whom 681,107 were children between the ages of 3 and 13; and of these, it was estimated that more than 200,000 needed school provision. Up to November, 1875, the number of new schools opened by the board was 102, and 33 were in course of erection. There were, at that time, under the control of the board, 199 school-houses, in 436 departments, containing 112,901 pupils. The school-houses have been erected with great care, and upon the most approved principles of school architecture. (See Robson's *School Architecture*, 1875, and R. T. Smith's *School Buildings and Fittings*, 1875.) "The result of the School Board action," says Sir Charles Reed, the chairman of the Board, "has been to add over 60,000 children now (1875) in attendance at the board schools, and about 45,000, to the denominational schools."

Teachers' Associations. — The teachers of England have formed various associations at different times, of which the most effective is the College of Preceptors (see PRECEPTORS, COLLEGE OF), which holds meetings and examinations, gives diplomas, and more recently, has instituted a professorship of education. Since 1870, the elementary teachers have formed an association called the National Union of Elementary Teachers, which is increasing in influence.

Secondary Education.—The schools for secondary education in England comprise the great endowed or foundation schools, including the nine so-called *public schools*; the proprietary schools; and the Ladies' Colleges.

The *public schools*, or colleges, nine in number, are Eton, Winchester, Westminster, St. Paul's School, Merchant Taylors' School, Charterhouse, Harrow, Rugby, and Shrewsbury. In

1861, the government appointed a commission to inquire into the revenues and management of these schools; and the results of the inquiry were published in four volumes (1864); and, in 1868, a Public Schools Act was passed, giving the commission power to frame statutes and regulations for these schools. They were accordingly remodeled, upon a new and uniform plan. The chief features are here presented.—(1) *Management.*—Before the appointment of the commission, bodies quite different in character were the managers. Thus, at Eton, the managers were the provost and fellows of the college; at Winchester, the warden and fellows; but the head-master had nearly absolute control. The Court of Assistants to the Mercers' Company were the governors of St. Paul's; and the Court of Assistants to the Merchant Taylors, of the school of that name. Harrow, Rugby, and Shrewsbury were governed by trustees. The new statutes of the commission have established something like a system in the mode of electing the various governing bodies, without entirely removing the peculiarities of each school. Thus, the governing body of Eton is now composed of (1) the provost of Eton, (2) the provost of King's College, Cambridge, (3) one member to be elected by the hebdomadal council of Oxford University, (4) one, by the council of the senate of Cambridge, (5) one, by the council of the Royal Society, (6) one to be nominated by the Lord Chief Justice, (7) one to be elected by the head, lower, and assistant masters, (8) not less than two, nor more than four, to be elected by the governing body itself. The governing bodies of the other schools are constituted in a similar manner, having regard to the peculiarities of each locality. These managers have entire control over the endowments, make regulations in regard to the buildings, and elect and dismiss the head-master. They are subject to no supervision except that of the Visitor, who is always a person of great eminence.—(2) *Teachers.*—The head-master appoints all the masters and other persons engaged in teaching in the school, and all hold their positions during his pleasure. The exercise of the power of dismissal by the head-master has, however, given rise to several disturbances. The masters, in these schools, occupy a peculiar position. They are keepers of boarding-houses, as well as teachers; and their incomes are mainly derived from the former. The expenses at the various schools differ. Those at Harrow are given as a specimen:

Public tuition and school charges (per annum), £28, 10 s.; private tuition (per annum), £15; board, washing, etc., at head-master's boarding-house (per annum), £68; entrance fees, £12. The other boarding-houses are divided into two classes,—*large houses*, in which the annual charge for board etc. is £90, and *small houses*, in which are received private boarders at an annual charge of £135.

(3) *Instruction.*—Classical instruction has always been the prominent feature of these schools. Other branches, such as mathematics, geography, history, and modern languages were formerly more or less neglected. The methods of teaching were bad. The tone of feeling prevalent discountenanced study. The boy who wished to gain the respect of his fellows, was compelled to distinguish himself in the cricket field, or in other athletic sports. If he failed in these, success in study brought him into contempt, instead of respect. The Public Schools Act has introduced great changes, and an approach to a uniform system. The following subjects are prescribed by the statutes for Eton: religion, classics, writing, arithmetic, mathematics, history, geography, and English; French, for boys who have attained the *middle division of the fifth form*, but German or Italian may be taken instead; natural science, for all after entering the *middle division of the fifth form*, and for every boy in the school whose parents desire it. After a boy has come within the *first hundred*, facilities are afforded him for pursuing special branches.—The age of admission is not exactly the same at all the schools; but, on the average, it may be said that no one is admitted below 10 years or above 15; and no one is allowed to remain beyond the age of 19. A preliminary examination is required. The number of classes, or *forms*, varies in the different schools. Each school is divided into two parts,—an upper and a lower school. The upper school of Eton is thus divided, the *Sixth* class being the highest: (I) *Fourth*, consisting of (1) *Lower Remove*, (2) *Middle Remove*, and (3) *Upper Remove*; (II) *Remove*, consisting of (1) *Upper Remove*, and (2) *Lower Remove*; (III) *Fifth*, consisting of (1) *Lower Division*, (2) *Middle Division*, and (3) *Upper Division* (the lower and middle divisions being each subdivided into a lower and upper remove); (IV) *Sixth*.

Before the commission sat, there was a great diversity in the numbers allowable in a division. At present, the statutes strictly limit this. In Eton, there must be not less than one classical master to every 100 boys in the school. In Rugby, there is to be at least one master for every 20 boys, including the head-master, and no class of boys under instruction, except the *sixth form*, must exceed 32 in number, without permission of the governing body.—Annual examinations of these schools are conducted by examiners appointed by the governing bodies. In all these schools, the pupils are divided into two classes,—*foundationers* and *non-foundationers*. The former, as the name implies, in some schools, receive their education gratuitously; in others, both their education and maintenance. Often, they have to gain admission to a foundation by a competitive examination. The others are boarded with the master, and sometimes, as at Harrow and Rugby, they reside with their parents. In the masters' houses, the masters act as tutors. *Fagging* (q. v.) is a custom peculiar to these schools; but the right to *fag* belongs, in most schools, to only a small number of seniors. At present, this custom is not wholly condemned. Indeed, the commission, after a strict investigation, reported that, "on the whole, it is a popular institution."

The location and date of foundation of each of these schools are here given:

NAME	Location	When founded
Charterhouse	London	1611
Eton	Eton (opp. Windsor)	1440
Harrow	Harrow-on-the-Hill	1571
Merchant Taylors'	London	1561
Rugby	Rugby	1567
St. Paul's	London	1512
Shrewsbury	Shrewsbury	1551
Westminster	Westminster	1560
Winchester	Winchester	1378

Other endowed schools are Christ's Hospital (q. v.), Dulwich College, at Dulwich, a suburb of London, founded in 1619; Queen Elizabeth's School, at Ipswich (1565); the Free Grammar School at Manchester, founded in the reign of Henry VIII.; St. Andrew's College, at Bradfield, near Reading; the Tonbridge Free Grammar School (1552); Repton School (1557); King Edward's School, Birmingham (1552); Wellington College, near Wokingham, Berkshire, founded by public subscription, in honor of the duke of Wellington, for the education of the sons of deceased military officers; and the City of London School, incorporated in 1834.—According to the Grammar Schools Act, *grammar schools* include all endowed schools maintained for the purpose of teaching Latin and Greek, whether the instruction be limited to these, or extended to other branches, either of literature or science. The purpose of these schools, as stated, is to give "an education higher than the rudiments, conducted under religious influences, within the reach of all classes, but with an especial preference for the poor boy who is apt to learn, and frequently also for some particular locality." The amount of endowment of the schools ranges from that of Christ's Hospital, the largest (over £42,000 a year), to some consisting simply of a rent charge of about £5 a year. Usually, the school possesses a school-house, a master's house, and an annual income. There are 15 grammar schools which have net incomes exceeding £2,000 a year; 13, at least £1,000 a year; 55, at least £500; 222, at least £100; and the rest are under £100 a year. The date of the oldest of the existing endowed schools is 1216 A. D. The endowed collegiate and grammar schools are 782 in number; and other endowed schools number 2,559; but, including those that have small endowments, the total is given at 4.021. The Endowed Schools Act (1869) intrusted to a commission the task of reorganizing these schools, chiefly in the direction of extending the benefits of the endowments.—The proprietary colleges and schools are of the same grade and character, as educational institutions, as the public schools. The most important are the following: Marlborough College, Cheltenham College, Haileybury College, Clifton College, Brighton College, Lexington College, and Rossall School, near Fleetwood, Lancashire. Besides these, there are King's College School and the University College School, at London, which are partly preparatory schools. The grammar schools in the Metropolis are quite numerous, and some of old foundation, as the Mercers' Company's School, founded in 1542; St. Saviour's, Southwark, in 1562; and the Brewers' Company's School, in 1687.

Ladies' Colleges.—Queen's College, Harley St., London, incorporated by royal charter in 1853, was instituted for the general education of ladies, and for granting certificates of knowledge. Queen's College School, for children from 5 to 14 years of age, is attached to the college.—Bedford College, London, was founded in 1849, and incorporated in 1869. The affairs are administered by a council of management, and the lady president; and the members of the college (26 male, and 32 female) include many eminent educationists.—North London Collegiate School, established in 1850, is endowed by a grant from the estate of Alderman Richard Platt. It pursues the course of study preparatory for the university examinations for women. The Camden School for Girls, established in 1871, is under the same governorship.—The Cheltenham Ladies' College was established in 1854, and now numbers 320 pupils. The object of the institution is "to provide for the daughters of gentlemen a sound and religious education of the highest order, and on moderate terms."—Girton College, Cambridge (incorporated in 1872), was opened at Hitchin, in 1869; and, in 1873, entered on the occupation of the present buildings, which had been erected by public subscription. The capital fund is now above £20,000. The college is designed to hold, in relation to girls' schools and home teaching, a position analogous to that occupied by universities toward the public schools for boys; and the promoters seek to obtain for the students admission to the examination for degrees of the University of Cambridge, and to place the college in connection with that university. The course occupies about three years, half of each year being spent in the college.—The Ladies' College, Southampton, was established by the Hampkin Association for promoting female education, with the view of raising the tone of female education in the south of England.

Superior Instruction. — The universities of Oxford and Cambridge long stood alone as university representatives of higher education. (See CAMBRIDGE and OXFORD.) The growing wealth and importance of the provinces however, and the increasing demand on the part of the prosperous middle classes for the more advanced education, from which they were practically shut out by the exclusiveness and expensiveness of the great seats of learning, have led to the establishment of colleges in different parts of the country. Indeed, the old universities have begun to recognize the necessity for an extension of their own influence and usefulness. In 1873, the Cambridge senate organized a scheme of local lectures; and, at the end of 1873, and again at the beginning of 1874, a session of twelve weeks was held in Nottingham, Derby, and Leicester;—the subjects taught being political economy, physical science, constitutional history, and English literature, and the number of students ranging from 30 to 500. In 1874, the scheme was extended to Bradford, Halifax, Keighley, and Leeds; and, in 1874—5, applications were received from Derby, Nottingham, Leeds, Bradford, Halifax, Keighley, Liverpool, Birkenhead, New Brighton, Leicester, Burslem, Hanley, Newcastle-under-Lyne, and Stoke-upon-Trent. Three conditions were insisted on: (1) a standard of excellence to give definiteness and thoroughness to study; (2) regular and systematic class teaching; and (3) a system of examination, regulating the granting of certificates. The reports of the examiners were highly satisfactory.

The University of Durham was instituted in 1832, under an act of parliament empowering the dean and chapter of Durham to appropriate an estate at South Shields for the establishment and maintenance of a university in connection with the cathedral. The management was intrusted, under the bishop as Visitor, and the dean and chapter as Governors, to the warden, a senate, and a convocation,— the senate being composed of the warden, the professors of Greek, mathematics, and divinity, the two proctors, and five other members of the convocation. The convocation originally consisted of graduates of Oxford and Cambridge, who are now reinforced by the graduates of the university itself. The office of warden is permanently annexed to the deanery of Durham; and a canoncy in the cathedral to each of the professors in divinity and Greek. University College was formed, at the opening of the university, for the purpose of uniting a system of domestic discipline with academical instruction. The Castle of Durham is held in trust for the University, its hall being used as a college hall, and its chapel as a college chapel. To extend the benefits of residence to persons of limited means, Bishop Hatfield's Hall was founded in 1846; and Bishop Cosin's Hall, in 1851; the students of the latter, however, were transferred to the former in 1864. The general academical instruction is similar to that of Oxford and Cambridge; and the B. A. degree examination is held at the end of two years, of 26 weeks each. There is a special course of theological study, and a License in Theology, granted on examination; and in the theological faculty alone is there any religious test or subscription. In 1870, the Newcastle-upon-Tyne College of Medicine (founded in 1851) became the Durham University College of Medicine, and its students are members of the University. To obtain a license in medicine or in surgery, a student must spend four years at some approved medical school, (one of the years. at least. at this college), and pass two professional examinations. The College of Physical Science, Newcastle-upon-Tyne, was founded in 1871, and incorporated with the University of Durham, in 1874. The endowment of the college was provided partly by the university, and partly by the leading landed proprietors, employers of skilled labor, etc. in the North of England. There are chairs of pure and applied mathematics, chemistry, physical and experimental philosophy, geology, and biology and physiology; and lectureships in classics, French, German, English literature, and mechanical drawing. The course lasts two years, and successful students graduate as associates in physical science. The general government is in the hands of 47 members, partly *ex officio*, and partly elected; and the ordinary administrators are a council of 15, elected out of, and by, the governors. In 1875, Codrington College, Barbados, was affiliated to the University.—Owens College, Manchester, opened in 1851. (See OWENS COLLEGE.) The Yorkshire College of Science was established in 1874, to supply instruction in those sciences which are applicable to the manufactures, engineering, mining, etc.—The University of London was chartered in 1836. (See LONDON, UNIVERSITY OF.) There is a board of governors, life, elected, and representative; and a council of 21 members, elected from and by them, for the administration of the college affairs. There are chairs of mathematics and experimental physics, chemistry, geology and mining, biology, and civil and mechanical engineering; and an instructor in textile industries. The title of Associate in Physical Science is conferred on students who attend classes, in not less than three departments, for each of two entire sessions, and who pass a special examination in each class at the end of their course. These departments are mathematics, physics, chemistry, geology, biology, and civil and mechanical engineering. In the session of 1875—6, there were 85 day students (of whom 28 were students of chemistry belonging to the Leeds School of Medicine), and 246 evening and occasional students.—University College, Bristol, was instituted, in 1876, to supply, for persons of both sexes above the ordinary school age, the means of continuing their studies in science, languages, history, and literature, and more particularly to afford appropriate instruction in those branches of applied science which are employed in the arts and manufactures. There are both day and evening lectures and classes; and medical education is provided by the Bristol Medical School, which is affiliated to the college.

Professional and Scientific Instruction.- The institutions for theological instruction are very numerous including those of the various denominations: (1) *Church of England*, as follows: St. Aidan's College, Birkenhead (founded in 1846); the Missionary College of St. Augustine, Canterbury (founded as an abbey in 605 A. D., suppressed in 1538, restored in 1848); Chichester Theological College (1839); Cuddesdon Theological College, Wheatley, Oxfordshire (1854); London College of Divinity, St. John's Hall, Highbury (1863); Lichfield Theological College (1857); Gloucester Theological College (1869); St. Bees College, Cumberland (1816); Salisbury Theological College (1860); Wells Theological College (1840); St. David's College, Lampeter (1822);

chartered, 1828), which prepares for the civil service and other professions, as well as holy orders; The Queen's College, Birmingham (faculty of theology, founded in 1852); and Church Missionary College, Islington. (2) *Wesleyan:* Wesleyan Theological Institution, near Manchester (1834); Wesleyan Theological Institution, Leeds (1868); Richmond College (1843), for training missionary students; Primitive Methodist Theological Institute, Sunderland (1868); and United Methodist Free Church Theological Institute (1872). (3) *Congregational:* Hackney College (1803); The Countess of Huntington's College, Cheshunt, Herts (1768); Spring Hill College, Birmingham (1831); Rotherham College, Yorkshire (1756); New College, London, founded in 1850 by the union of several other Colleges; Lancashire Independent College, near Manchester (1816); and Bala Independent College, founded in 1842. (4) *Roman Catholic:* College of St. Peter and Paul, Bath (1867), designed to furnish a liberal education for the higher classes, based on the principles of the R. C. Church, its course in philosophy and theology embracing 5 years; St. Mary's College, Birmingham (1793), which affords a classical education, as well as professional instruction; and St. Bruno's College, St. Asaph, designed exclusively to prepare candidates for the priesthood. (5) *Baptist:* New College, London (1810); North Wales Baptist College, Llangollen (1862); Baptist Theological Institute, Pontypool, Monmouth (1807); The Baptist College, Haverford-west (1839); Pastor's College, instituted at Camberwell in 1856, removed to Metropolitan Tabernacle, in 1861; Bristol Baptist College (1770); General Baptist College, Chilwell, near Nottingham (1797); and Rawdon College, near Leeds (1804). (6) *Presbyterian:* Carmarthen Presbyterian College (1719); and Theological College, London (1844). (7) *Unitarian:* The Unitarian Home Missionary Board, Manchester (1854). (8) *Calvinistic Methodist:* Trevecca College, near Talgarth, Wales; (9) *Free Religious Thought:* Manchester New College (1786).

There are four *Inns of Court*, qualified to call students to the Bar: (1) Lincoln's Inn, (2) the Middle Temple, (3) the Inner Temple, and (4) Gray's Inn. Each of these nominates two *benchers*, and the eight *benchers* constitute the Council of Legal Education. The council appoints five *readers*, who deliver lectures in each term, and guide the professional studies of young men preparing for the Bar.—There are *medical* schools connected with the universities; also the Royal College of Physicians, the Royal College of Surgeons, the Society of Apothecaries; Metropolitan hospitals and schools of medicine: St. Bartholomew's, Charing Cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College; and the following provincial schools: Queen's College, Birmingham; Bristol Medical School; Cambridge Medical School; Leeds School; Liverpool Royal Infirmary and School; Manchester Royal School; Newcastle-upon-Tyne (Durham); and Sheffield Medical School.—*Scientific instruction* is given in the Science and Art Department of the Committee of Council, South Kensington, which administers a sum of money voted annually by parliament to promote instruction in science, especially among the industrial classes. Science schools or classes may be formed in any locality under the management of a local committee. The aid is given in the form of (1) public examinations, held annually, in which Queen's prizes of books and instruments are awarded; (2) payments (from £1 to £4 per student) to teachers or committees, on the result of the examinations; (3) scholarships and exhibitions; (4) building grants; and (5) grants toward the purchase of fittings, apparatus etc. The science schools examined in May, 1876, numbered as follows: in England, 1,206; in Scotland, 113; and in Ireland, 165; having an aggregate of 4,559 classes, and 52,330 students. The schools of art in the United Kingdom, in 1875, numbered 136, with 23,381 students; and the night classes, 579 (in England alone, 543), with 21,601 students. Other scientific schools are the following: (1) the Agricultural College, Cirencester, founded in 1842, which has a farm of 500 acres. The teaching staff comprises professors of agriculture, chemistry, veterinary surgery, natural history, mathematics and surveying, and drawing. (2) The Royal School of Mines, founded in 1851, having grown out of the Geological Survey of the United Kingdom, commenced in 1834, by the late Sir Henry de la Beche, its first professors being the officers of the Survey. There are various exhibitions, scholarships, and free admissions attached to the school. (3) The Royal Academy of Arts, founded in 1768, removed to the National Gallery, in 1838, and to Burlington Home, in 1869. (4) The Royal Academy of Music, founded in 1822, receives an annual parliamentary grant. (5) The Royal Military Academy, at Woolwich, founded in 1745, and the Royal Military College, at Sandhurst, in 1799, also the Royal Military Staff College. (6) The Royal Naval College at Greenwich, founded in 1873, and (7) Eastman's Royal Naval Academy, Southsea, founded in 1851.—See Sir J. K. SHUTTLEWORTH, *Public Education*, 3 vols. (1853); *Four Periods of Public Education* (1862); and *Thoughts and Suggestions on Certain Social Problems* (1873); ERNEST WAGNER, *Volksschulwesen in England* (1864); DONALDSON, *Lectures on Education in Prussia and England* (1874). In regard to secondary instruction, see *Report of Her Majesty's Commissioners appointed to inquire into the Revenues and Management of certain Colleges and Schools, etc.*, 4 vols. (1864); *Return—Public Schools* (statutes, etc.), printed by order of the House of Commons (1876); DEMOGEOT and MONTUCCI, *De l'enseignement secondaire en Angleterre et en Écosse* (Paris, 1868); STAUNTON, *The Great Schools of England* (1865); MAXWELL, *A History of Eton College* (1875); TURNER, *Educational Legislation* (Lond., 1876); PASCOE, *A Handbook to the Schools of England* (Lond., 1877). (See also CAMBRIDGE, and OXFORD.)

ENGLAND, Church of. See Episcopal Church.

ENGLISH, The Study of. The mother-tongue has peculiar relations to education. Language has a twofold nature,—on the one side, voice, on the other, thought. Early thought is almost all stimulated, guided and supported by the mother-tongue. All early acquisition of knowledge may be regarded as the study of the mother-tongue; and, even in civilized nations, few persons ever advance beyond the knowledge stored up for them in their native speech. The mother speech is also the means of communicating with others, and of influencing them; so that the study of it as an art includes the study of rhetoric and oratory, and of the art of poetry.

It would seem then that there are four chief direct uses in studying English: (1) To understand what is spoken or written in that language; (2) To speak it well; (3) To write it well; and (4) To master English literature. And there are three remoter ends: (1) To master the language scientifically; (2) To acquire the knowledge of language in general; and (3) General culture.

Early study, in infant schools, kindergartens, and primary schools.—The *meaning of words* is the first thing children learn of languages. The names of a few familiar objects and acts are repeated in connection with the objects and acts themselves so often, that the infant's thought passes promptly from the sound to the thing. Thus *papa, mamma, kiss, laugh,* make the child think of the person or act before it can speak any words. Many words are also attached to thoughts by being often heard connected with other words in discourse. Such knowledge, caught by the child rather than taught to it, is for the most part very indefinite and inexact, but no part of education is more important.

The objects named should be objects worthy of thought. Good and bad qualities should be marked by such tones and manner as will give their names correct and powerful associations. The means of expressing the affections should be carefully taught. In the kindergarten or other infant school, care should be methodically taken to teach the words which accurately name the objects and processes that the children learn; unnamed objects and processes, however amusing or ingenious, enter little into thought and contribute little to culture. A leading purpose in all object teaching should be to give valuable ideas; but that is the same as giving familiarity with good words. Teachers of infant schools need good books, containing classified lists of important words, with directions how to teach them by means of well-chosen object lessons, and amusing occupations. See Kindergarten, and Object Teaching.) For children of a larger growth, we have a great number of *Spellers* and *Definers*, and small dictionaries which teach the meaning of English words. The latter should be constantly used.

The study of meanings in such manuals is, however, of little worth, unless supplemented by object teaching on the one hand, and by the study of discourse on the other. Manuals of object teaching arranged for the purpose are wanting. Object teachers often contrast the study of words with the study of things, and condemn the study of words, instead of teaching them through their exercises. There are many books made up of progressive selections of discourse, intended to introduce young pupils to words. Most *Primers* and *Readers* attempt something in this way, and some are skillfully prepared with notes and exercises for this purpose. (See Primer, and Reading.)

To speak well requires a knowledge of the meanings of words and of the combinations in which they are actually used, of the meanings and uses of grammatical prefixes and suffixes, and of the exact sounds which are made by good speakers. Speaking must go on at a certain speed; and, therefore, thoughts, words, and the movements of the vocal organs must be closely associated, so as to follow one another without effort and with great rapidity. Much practice in speaking is necessary in order to speak well; and, in general, practice in the very kind of speaking in which the excellence is desired. In the early stages of education, this must be almost wholly imitative practice. Children catch and use the sounds and forms which make the liveliest impression on them, and which they hear oftenest; to use a form or sound once, makes it most likely to occur to the mind again. Teachers should, therefore, train by inducing imitation of their own speech. Exercises may be used in repeating after the teacher the elementary sounds, and afterwards difficult words, and then familiar dialogues, and finally passages of poetry, or elevated prose, which the teacher likes and can repeat with feeling. Incorrect articulation and bad grammar should be constantly corrected, not by repeating and caricaturing what is faulty but by substituting the correct expression. Children should also be encouraged to talk, at proper times, to repeat the explanations of the teacher, not *verbatim* throughout, but yet with a constant, close, and correct use of the technical terms or important words; nor is it unscientific to commit to memory formulas of permanent importance, to be fully comprehended afterwards; such as the multiplication table, catechisms of moral and religious truth, and noble utterances which it does men good to have fast in the memory. The youth should be led on by language faster and farther than his own thoughts could have gone alone. Practice of this kind will naturally go along with reading.

Learning to read should begin early. The monstrous spelling of the English language makes this much more difficult than to learn to read German; and teaching the names of the letter, and the sounds of the syllables as if made up of them, has a mischievous effect on the reason of the learners. Several methods are used in our schools to overcome the difficulties. The word-method (q. v.) is one. In this, children are taught to recognize words as wholes before learning the letters. In skillfully prepared books, with pictorial illustrations, children learn to read very rapidly by this method, but not so accurately; and it is very hard to teach them to spell. Skillful teachers will use a judicious combination of the two methods. Books are also prepared with an alphabet in which each letter has always the same sound, a proper phonetic alphabet, and with classified examples of words, and reading extracts, spelt in the phonetic alphabet wholly at first, and gradually passing to our standard spelling. These have been used for some years in New York, Boston, St Louis, and elsewhere, and are reported to save one half of the time usually devoted to learning to read. There is now an active movement for the reform of our spelling which it may be hoped will save the next generation much time and toil. (See ORTHOGRAPHY, and PHONETICS.) Books of this kind are LEIGH'S edition of various elementary reading-books; also DAVIS'S *American Primer*, DOUAI'S *Rational Phonetic Primer*, LONGLEY'S *American Phonetic Primer*, SHELDON'S *New Phonetic Primer*, SHEARER'S *Combination Speller*, VICKROY'S *Phonetic First Reader*. Primary cards and charts to aid in this early instruction are to be had in good variety. Practice in writing is one of the best aids in learning to read and spell, and hence, copying choice extracts, and then writing them down from memory, is quite useful. Soon after lessons in penmanship begin, grammar should be taken up.

Grammar is often used as a name for the whole science of language and the art of using it; but by masters of the science of language, it is now confined to the classification of words into parts of speech, according to their uses in discourse, the description and exposition of the changes of form called inflections, and the uses of these in the correct construction of sentences. There would be some advantage in dropping the old traditional definitions, which lead teachers and pupils to expect that the study of English grammar will make them able to speak and write the English language correctly. It is only one of the helps to correctness in speaking and writing. The attempt by makers of school grammars and by teachers to do too much is one reason why the study is so much neglected and abused. Descriptive grammar consists of definitions of the parts of speech, paradigms, and rules of syntax. With children, a careful selection of simple and typical matter should be made, just as in botany or in any other science. This matter should consist of definitions and rules, stated in accurate scientific language, but simply and briefly; and of selections of words and sentences, also simple and clear, and suited to illustrate the definitions and rules. This matter should be managed by the teacher so as to use mere verbal memory as little as possible, and to train the pupil to see, hear, and think as much as possible. The definitions and the rules should be learned like rules in arithmetic, but the main work should be the application of them to examples. The scholar should every day hand in written grammar work on the slate or on paper, like sums in arithmetic; and the preparation and explanation of this work should be the main grammar lesson in the early years. This method needs some system of notation by which any sentence may be put on paper or on the blackboard with its words so designated by signs, or by an arrangement in diagrams, that the analysis and parsing of it may be made plain to the eye. Such systems are found in several books. A considerable number of our best teachers use substantially this method, many of them, without a book, dictating, day by day, definitions which the pupils are to remember, and giving out words and sentences to be classified and analyzed, also proposing trials in collecting and inventing words and sentences of the kind to be studied. Books are often wholly condemned by these teachers, who collect, year by year, in their own note-books, or memories, a store of happy questions and examples, as well as carefully considered definitions and rules; and it would obviously be a great help to young teachers, as well as to pupils, to get a good note-book of this kind, neatly printed, and there are some books for beginners which are, in substance, such note-books; we mention *A Parser and Analyzer for Beginners with diagrams and suggestive pictures*, by F. A. MARCH (New York), and GREENE'S *Analysis* (Phila.). (See ANALYSIS, GRAMMATICAL.)

Advanced Study in High Schools and Colleges. — Students entering the high school should have been taught general descriptive grammar thoroughly, so as to be able to apply its definitions and rules promptly and accurately to sentences which they understand, and which have no strange idioms. They should also have mastered some system of notation to set forth their grammatical knowledge in writing. They should have also been trained in articulation and in the idioms of common conversation, and should have had some practice in writing compositions. The study of English will now be directed to acquire skill in speaking and in writing, and a mastery of English literature, and the philosophy of speech. Each of these demands special study and practice.

I. *Skill in Speaking.* — This should be cultivated in various ways: (1) By free conversation on topics at set times, when the teacher may act as a model and censor; (2) By the declamation of selections from standard authors; (3) By translating from foreign languages, the student being required to give the thought of the author in his own English with the common rapidity and inflections of his own discourse; (4) By recitations by topics. (In all studies which admit of it, the scholar should be made to stand up, face his audience, and speak to them on the topic on which he is to recite. This is probably the most efficient means of giving power of connected discourse.) (5) By debates on assigned topics; (6) By the study of grammar. Some larger grammar which gives a minute exposition of all the idioms of the language should be taken up. A historical and scientific grammar is the best. But for immediate use in speaking, correct and clearly stated generalizations of the facts of the language are what is wanted. A knowledge of these is necessary to correct speaking. It is a great mistake to suppose that if one never heard bad English, he would always speak correctly. In the mother-tongue, every one generalizes instinctively. The child makes all its plurals in *s*, and says *mouses* for *mice*, *mans* for *men*; so it says *buyed* for *bought*, and the like, making its instinctive and incorrect generalizations continually. This process is active with every speaker until accurate generalizations, *i. e.*, grammatical knowledge, are substituted for the instinctive work of association. The subject usually precedes a verb; hence, the instinctive talker uses *who* for *whom* before the verb. The object usually follows a verb; the instinctive generalization suggests *it is me*, for *it is I*. In the households of educated people, a continual correction of the young folks is kept up, until they learn the most common words and phrases pretty thoroughly; but, in the less common literary style, in which abridged constructions, tropical expressions, and relics of obsolescent forms occur continually, no one ever speaks with uniform correctness, unless he studies grammar carefully. The greatest geniuses are no exceptions. Chaucer, Ben Jonson, Milton, and Addison for example, were careful students of grammar. The text of Shakespeare's plays has to be corrected like a school boy's theme. Moreover, all of us hear much bad English, and need carefully and intelligently to study the laws of the language, in order to distinguish the good from the bad. This kind of study should be constantly applied in the criticism of the speech and writing of pupils at school, and of printed matter. A knowledge of descriptive grammar is also needed for intelligent conversation upon the meaning of obscure sentences. Among the many good descriptive grammars of modern English, we may mention Brown's, Bullion's, Butler's, Clark's, Covell's, Fewsmith's, Greene's, Hart's, Kerl's, Murray's, Pinneo's, Weld's, Quackenbos's, Vickroy's, and Whitney's. We shall mention, farther on, works in which a historical view of English grammar is presented.

II. *Skill in writing* demands practice in writing. From the time of entering the high school the student should write often and carefully. To study without pen in hand is to dream. Beside the writing of grammatical exercises as above described, those who have their future occupation decided, should be trained in the writing needed in that occupation. Future business men should practice the writing of imaginary business letters, answers to advertisements in the newspapers, and the like. Any student may keep a journal, may write descriptions of buildings, machines, scenery, persons, meetings, conversations, books; may prepare reports on such matters as are examined by committees for private corporations, or public meetings. They should also write in connection with their studies, preparing careful statements upon assigned topics, notes of lectures, written examinations on general subjects, and the like. Then there are more elaborate, ornate, rhetorical performances, and elegant essays, and metrical composition.

Two periods may be mentioned in the mastery of language. In the first, the ruling idea is imitative, the writer seeks to fashion his speech after that of the authors or persons whom he admires. He aims to have every expression bear the current stamp, and will reject every phrase not familiar in good books. Most writers never pass out of this stage. The source and model of good writing to them is an intimate acquaintance with literature. But great writers, original thinkers, learn that the current phrases do not convey their peculiar thoughts, and they advance to invention according to their own ideals. Vital signs should not be neglected even in school days; it is by following these that the most perfect mastery of the language is to be attained; but school work will be mostly in the first stage. Active and careful practice in writing is generally the best stimulus and help to the thorough study of English. Imitative work has its value. Fix in the memory the thought of an admirable passage in a classic author, then write it as well as possible, and compare the result with the original. There are some good books prepared as aids to the young writer: ABBOT & SEELEY'S *English Lessons* (N. Y.); SWINTON'S *Language Lessons* (N. Y.); ABBOT'S *How to Write clearly* (Boston); CROSBY & LUDLOW'S *First Lessons;* DAY'S *Young Composer*, *English Composition*, and other works (N. Y.); PARKER'S *Aids to Composition* (N. Y.); QUACKENBOS'S *First Lessons in Composition* (N. Y.), and other works by Cox, Drew, Frost, Harper, Hart, Kerl, Pinneo, Sprague. These lead on to rhetorics, like those of Bain, Blair, Day, SPENCER'S *Philosophy of Style*, Shedd, Whately, and the like. A great part of the writing should, however, be the record of thought and research in the study of English literature.

III. The *philological study of English* is the study of the language as used in literature, *i. e.*, as shaped by the idea of the beautiful. The language of literature is an ideal language of men of genius. It is to be studied in their writings. The main object of the study is to rethink their thoughts. Every classic language contains in its literature the record of the noble thoughts and acts of thousands of years, expressed in thousands of happy and harmonious phrases, the invention of thousands of men of genius. This is the richest inheritance of a cultured race. Youth who, if they had no classic speech, could do nothing better than watch birds and bugs, to snare and kill them, can, by means of speech, rise, almost in childhood, to the highest thoughts of all the ages before them. The study of these masterpieces of literature may be carried on by two methods. One is rapid reading, enjoying and emphasizing special beauties, and making occasional esthetic and explanatory criticism, but avoiding all minute researches, especially all grammatical and scientific labor, which might give a distaste for the lesson and the author.

The other method is that of giving minute and profound study, linguistic and philosophic, to the representative passages of representative works. The first method gives a delightful occupation to sympathetic pupils, and proves especially valuable in the education of women. The unsympathetic and hard-headed are unaffected by it; and it is, at its best, but an introduction to the authors, leaving the real philological mastery of them yet to be attained. This comes, if it come at all, from long dwelling, and much study, line by line, word by word, such as is bestowed on the noble passages of Greek or Latin writers. In studying the literature of the mother-tongue, it is hard to get this concentrated and prolonged attention. The familiar words slip rapidly through the mind, and delude the young student with the impression that he thoroughly understands them. There is a fatal facility in extemporizing the lessons. This difficulty is overcome by making the text the foundation of further study, and by requiring written papers. Whatever is necessary to comprehend all the thoughts and allusions, matters of history, biography, mythology, geography, physics, metaphysics, theology, and the like, will, of course, be carefully looked up. The history of the book which is being studied, should also be learned, both as to its growth in the mind of the author, and its reception and influence. The character of the author and his life and times should be studied, as essential to a comprehension of his work and speech, so as to see the man as a representative man, and the work as a representative work. The rhetorical laws, and the principles of poetic, epic, and dramatic art should be applied word by word, line by line. Then there is the study of the words, their exact meaning and associations in the mind of the writer, to be learned partly by gathering up his different uses of them, an easy and delightful labor in those authors for whom a concordance has been made, as Shakespeare, Milton, Pope, Tennyson; it implies also a study of the general usage of the time of the writer. The study of synonyms also comes in, and of derivations, as a guide and aid in fixing the exact meaning of words. Written analyses, derivation papers, synonym papers, and tables of rhetorical figures, will make sure that the work is done. Happy phrases and notable sentences may be learned by heart; and by studying many works, the knowledge of English as a record of culture may be attained, which is the purpose of classical philological study.

IV. *Comparative philology*, as the science of language is often called, suggests still further study. It sets before us English as a member of a great family of languages, having a history, and laws of growth, and made up of words and phrases, each of which has its own history, to be understood in view of the laws of thought and voice. It calls for the study of the physiology of the organs of speech as the basis of the classification of the vocal sounds made in English, and for the study of psychology to explain the meanings of the sounds. The English speech, as far as its grammatical forms are concerned, is a development of the Anglo-Saxon; in its vocabulary, it is a mixed language, made up originally of Anglo-Saxon and Norman-French, and later enriched by contributions from Latin, Greek, and many other languages. The languages which are nearest of kin, and throw most light on it, are Friesic, Gothic, Icelandic, and High German on the one side; French and Latin, leading on to Greek and Sanskrit, on the other.

Phonology gives a history and exposition of the sounds of English. It shows that the present sounds of most words are changed from earlier ones, and it seeks the laws which govern the changes. It also points out and explains the relations of these sounds to those in other languages. The fullest discussion of historic phonology in any available text-books for schools is in MARCH's *Comparative Grammar of the Anglo-Saxon*. ELLIS's *Early English Pronunciation* (London), still incomplete, is the great storehouse of facts. SWEET's *History of English Sounds* (London), and the historical grammars mentioned below, are also worthy of study.

Grammatical etymology seeks to explain the origin of all the inflections. In modern English, cases and tenses, and the like, seem to be formed by adding letters, or changing vowels at pleasure; we add *s* to form the possessive *John's*, *d* to form the past *loved;* we change *a* to *e* to form the plural *men*, *o* to *e* to form the past *held*. When we follow these words back to Anglo-Saxon, we find that our monosyllables are there polysyllables, and many of them obvious compounds, whose meaning we see at once; *loved* is there a trisyllable, compounded of *love* and *did*. But many words are not soluble in Anglo-Saxon, and we turn to other languages for aid. Gothic is the first great source of light. Anglo-Saxon is of the 9th century, but in Gothic we have the forms of the 4th century of a nearly kindred speech, and the gain is great: *held*, which is an obscure monosyllable in Anglo-Saxon, in Gothic shows *haihald*, a reduplicated root. The Gothic, however, often fails to solve the problem, but it generally serves to identify the forms with some like form in Latin and Greek, which may, perhaps, give the key, or, if not, lead us on to the Sanskrit, where so large a number of inflection forms and affixes of derivation, are seen to be compound words, that the philologist works on the theory that they all are, and thus makes large progress in their solution. These languages, — Anglo-Saxon, Gothic, Latin, Greek, and Sanskrit, have been most laboriously studied; and excellent manuals of comparative grammar and etymological dictionaries of each are at hand, at least to the German scholar, for the titles of which see the articles on these languages. Icelandic, or Old Norse, is also of great aid in studying the forms of English, especially in the transition period from Early Anglo-Saxon. All these the earnest scholar may study. The High German also has been much worked over, and strengthens the inductions made from our nearer kin, occasionally throwing light on a doubtful point. The comparative study of derivation, syntax, and prosody leads through the same historical course. Parallel with the external history of the forms, runs a history of their meaning, a history of thought, and its laws of change and progress in connection with language. The science of language does not stop with the Indo-European family, but for a perfect understanding of English compares it with the other great languages of the world, — with the Semitic, the Chinese, and the aboriginal tongues of America. It seeks to determine its relations to all languages, and to an ideal form of speech.

How much of this study should be attempted in our schools and colleges, and in what method, are mooted questions with educators. Germany has, heretofore, been the chief seat of this learning, and it has been given in lectures to select classes in the universities. It is gradually working its way, through our best grammars and teachers, especially of Greek, into the common stock of linguistic knowledge and teaching. A considerable number of the American colleges give a few lectures on the subject in the senior year, or study Whitney's *Language and the Study of Language*. In 1855, a department of the English language and comparative philology was established in Lafayette College, and an arrangement of all the linguistic studies of the college attempted, by which the topics of comparative philology might be gradually introduced to the students, in connection with the recitations, in reading the classic authors of each language. Phonology is taken up the first term. Lessons in the pronunciation of Latin, Greek, or other languages, are given, with the history of the sounds, and the laws of letter change. Then, at the daily lesson in reading, attention is called to such illustrations of these laws as occur in the text, and the facts of each language are compared with English. A special examination in these matters is held at the end of the term. In successive terms, the etymology of the verb and the noun, derivation, syntax, and prosody, are taken up in the same way, from the point of view of comparative philology, with daily application to the text. The languages are studied, in the classical course, in the following order: Latin and Greek, French, German, Anglo-Saxon, English. In the scientific course, the early work is through a comparison of words in English, French, and German; then come Anglo-Saxon and higher English. It goes on in connection with a literary and critical study of the authors, and ends with a synoptical general course, including, in one term, the science of language, and in another a summary of English literature. This course has been very successful at Lafayette College, and has been introduced, in its application to Anglo-Saxon and English, into some other institutions, and has attracted interest and commendation in Europe. Perhaps no study, certainly no linguistic study, has grown more rapidly, within the last 15 years, than that of English. Previous to that time, there was then hardly an attempt at the scientific historical study of it in England or America. There were no text-books, — historical grammars or other histories of the language, nor good etymological or historical dictionaries, nor editions of classic English authors with philological apparatus for study. Now, all our good colleges and universities, and many of our best high schools and academies, attempt a course of English, and a fair supply of text-books of every kind is to be had. Of these the following is a summary: *Method of Philological Study of the English Language*, by Francis A. March, (New York, 1865). This gives minute directions for carrying out a course of study like that above described. It begins with Bunyan, and sets forth topics for an introductory essay on his life and works, with bibliographical references. Then it gives an extract from *The Pilgrim's Progress*, and references to parts of the grammar to be studied, accompanied by questions applying the matter to the text, given in full, like a verbatim report of a recitation, six pages of questions on twelve lines of text. Synoptical questions and topics for essays follow. Milton comes next, and then follow Shakespeare, Spenser, and Chaucer, treated in the same way, but with a progressive series of grammatical and philological topics. This method has been used in several high schools and colleges with good success. The work is also to be had bound in one volume with Fowler's Grammar, to which frequent references are made. Sprague's *Masterpieces of English Literature* (New York) is prepared for the same kind of study; it contains selections from Chaucer, Spenser, Bacon, Shakespeare, Milton, and Bunyan, with notes for progressive grammatical, philological, and rhetorical study, beginning with phonetics in connection with Chaucer, and ending with comparative philology in connection with Bunyan. Day's *Introduction to English Literature* (New York) is of similar content and method. Craik's *English of Shakespeare* (London and Boston) consists of the text of *Julius Cæsar*, prepared with copious notes on philological matters suggested by the text, and other apparatus for thorough study,—an excellent book. To these may be added Grier's *Studies in the English of Bunyan* (Phila.); and Carpenter's *English of the XIV. Century* (Boston). From American editors, we have the following series of classics prepared for school use, with more or less annotation: Boyd's Series (New York), including *Cowper's Task*, *Milton's Paradise Lost*, *Pollok's Course of Time*, *Thomson's Seasons*, *Young's Night Thoughts*, and *Bacon's Essays*; Hudson's Series (Boston) a valuable one; the notes and other apparatus are, in the main, directly explanatory or critical, primarily for rapid reading; it includes plays of *Shakespeare*; *A Text-book of Poetry*, consisting of selections from Wordsworth, Coleridge, Burns, Beattie, Goldsmith, and Thomson; *A Text-book of Prose*, containing selections from Burke, Webster, and Bacon; Rolfe's Series, New York, including Shakespeare's *Merchant of Venice*, *The Tempest*, *Henry VIII.*, and *Julius Cæsar*; and Goldsmith. (See English Literature.)

From the Clarendon Press, Oxford, England, are issued for students of English, *Chaucer*, by W. W. Skeat; *Specimens of Early English*, by R. Morris and W. W. Skeat; *The Vision of William concerning Piers the Plowman*, by W. W. Skeat; *Shakespeare,—Hamlet*, by W. G. Clark; *The Tempest*, by W. Aldis Wright; *King Lear*, by W. Aldis Wright; *Milton,—The Areopagitica*, by J. W. Hales; *Addison,—Selections from the Spectator*, by T. Arnold; *Typical Selections from the Sixteenth to the Nineteenth Century, with notices and notes; Specimens of Lowland Scotch and Northern English*, by J. A. H. Murray; also a series of English classics for students, especially for ladies' schools and middle class schools, under the superintendence of Rev. J. S. Brewer, M. A., professor of English literature at King's College, London, including Parts of *Chaucer*, of *Spenser's Faerie Queene, Hooker's Ecclesiastical Polity*, Book I., *Shakespeare's Merchant of Venice, Richard the Second*, and *Macbeth; Bacon,—Advancement of Learning*, and *Essays; Milton,—Poems;* parts of *Dryden, Bunyan, Pope, Johnson, Burke*, and *Cowper*.

Grammars, Historical and Comparative, for the earliest period are: March's *Comparative Grammar* (New York) (see Anglo-Saxon); Hadley's *Brief History of the English Language* (Springfield); *Compendium of the Comparative Grammar of the Indo-European Languages*, Sanskrit, Greek, and Latin, by A. Schleicher, translated by H. Bendale (London); *A Comparative Grammar of the Teutonic Languages*, by J. Helfenstein (London); *Historical Outlines of English Accidence*, by R. Morris, (London); *Elementary Lessons in Historical English Grammar*, by R. Morris (London); *A Shakespearian Grammar, An Attempt to illustrate some of the differences between Elizabethan and Modern English*, by Rev. E. A. Abbott, (London); *Handbook of the English Tongue*, by J. Angus (London); Latham's *English Language* (London and New York); Fowler's *English Language* (New York); Haldeman's *English Affixes* (Phila.) The great German-English grammars are Mætzner's, now translated in London, and Koch's, for which see Anglo-Saxon.

Dictionaries. — Webster's *Unabridged Dictionary of the English Language* (Springfield, 1865); Worcester's *Dictionary* (Boston); *Shakespeare-Lexicon*, by Dr. Alexander Schmidt (Berlin and London, 1875); Halliwell's *Dictionary of Archaic and Provincial Words* (London); *A Dictionary of the Old English Language, 12th—15th Centuries*, by F. H. Stratmann (2d ed., London, 1873); *A Dictionary of English Etymology*, by H. Wedgwood (2d ed., London, 1872); *Etymologisches Wörterbuch der englischen Sprache*, by Ed. Mueller (Köthen, 1865); Jamieson's *Dictionary of the Scottish Language*, ed. by Longmuir (Edinburgh, 1867); Bartlett's *Dictionary of Americanisms* (Boston).

Further aids are: *Lectures on the English Language* (New York); and *Lectures on the Origin and History of the English Language*, by G. P. Marsh (New York); Hadley's *Essays, Philological and Critical* (New York); Whitney's *Oriental and Linguistic Studies* (New York); Müller's *Lectures on the Science of Language*, and *Chips from a German Workshop* (London and New York); Shepherd's *History of the English Language* (New York); De Vere's *Studies in English* (New York); Gould's *Good English* (New York); Swinton's *Rambles in Words* (New York); *Select Glossary of English Words used formerly in Senses different from the present*, by R. C. Trench (London); *The Philology of the English Tongue*, by J. Earle (London); *On the Study of Words*, and *English Past and Present*, by R. C. Trench; Alford's *Queen's English* (Lond. and N. Y.), and Moon's *Dean's English* (Lond. and N. Y.), and *Bad English* (Lond.); White's *Words and their Uses* (N. Y.); *Outlines of the History of the English Language*, by G. L. Craik (London); *Sources of Standard English*, by Oliphant (London); *Changes in the English Language between the publication of Wiclifs Bible and that of the authorized Version*, A. D. 1400 to A. D. 1600, by H. T. W. Wood (London); *English Writers*, by H. Morley (London); *History of English Sounds*, by H. Sweet (London).

ENGLISH LITERATURE. To know the writings and the lives of the best English authors, to learn what past or foreign literature influenced their minds and culture, to be able to trace a certain development of thought and style from the period of the *Beowulf* down to the time of Tennyson and Browning, to know a writer's place among his contemporaries, to be able to give the period and even the author of a passage seen for the first time,—to have in one's head, in short, some kind of historical view of the whole of our great literature, is a large ambition, which—like many other ambitions—has a strong tendency to "overleap itself." But, if wisely begun at school, and followed out with zeal at the university, it is found to be a kind of knowledge as solid as most others, and far excelling many in its sources of delight, inspiration, and strength. But the subject is an enormously large one for school purposes; indeed, its very magnitude would seem to shut it out from the list of school subjects. The whole cycle of literature is no more to be known by one person than the whole circle of the sciences, still less by young people at school. The impossibility of achieving the whole task being seen, two questions at once arise: (1) What shall we teach and what leave untaught? and (2) How shall we teach it?

In attempting to answer the first of these questions, we can find some guidance from analogy; and the school subject which appears, in its vast size and the enormous contents of its wealth, to have the closest resemblance to literature is the subject of *geography*. Now, in geography, we do not burden the attention and overload the memory of our pupils with the infinite number of names of small towns, insignificant rivers, diminutive lakes, and unimportant headlands; but we take only the most prominent and, as it were, the central features of the world, and round these we group the knowledge which is intended to abide with the pupil, and to serve as a nucleus for his subsequent accumulations. In the same way, there are certain names which the sifting of time has caused to stand out with always increasing clearness; there are certain books which have been, and which continue to be, *forces* in the development of civilized humanity; and it is with these authors and with these books that the teacher should make the pupil acquainted. Thus stated, the path seems to be plain — so plain that no good teacher can miss it. But there are two dangers — two besetting sins, which await the teacher in his attempts toward the systematic treatment of a subject so large; and these are the vices of *encyclopædism* and *abridgment.* Looked at more closely, both these vices are seen to be only two sides of the same central error—an error which pervades all kinds of teaching, and which is, indeed, the most prevalent educational error of the present day. By *encyclopædism*, is meant the desire to include too many facts—and, in the present instance, too many authors—within the range of the pupil's mental vision; and the consequence is a pressure which results in an *abridgment* of the closest kind—an abridgment in which nothing is said of—no facts are given about—the author, but when he was born, and when he died, and the name of his best-known book. It is plain that such knowledge is no knowledge at all, and is of no more value than an acquaintance with the street directory. The desire to teach too much ends in achieving too little; the attempt to learn everything results in nothing. Besides, the pupil must have a *living* and *interior* knowledge of English literature, and not a dead and external acquaintance with its mere husk, appendages, and circumstances. He must be trained to know—and that is to love—Chaucer and Spenser, Dryden and Pope, Wordsworth and Coleridge; and the question which presses upon the teacher is therefore: How is this to be done? Before answering this question, the teacher must have settled with himself *what* is to be done.

(1) Let us suppose that, seeing the impossibility of embracing all the details of so large a field, he has resolved upon making a selection of the best writers in prose and verse in each epoch. Round each of these he will then collect the most able of his contemporaries, and explain to his class their relations and the influence which each had upon the other, and which the requirements and spirit of the period had upon them all. The teacher will then, probably, select *Chaucer*—as the type of the chivalric period of English Literature; *Mandeville*—as the "Father of English Prose;" *Spenser*—as the richest poet of the Elizabethan era; *Shakespeare*—as the greatest dramatist of the period when the *drama* was at its highest; *Hooker*—as the type of the ornate and elaborate prose style of the sixteenth century; *Bacon*—as the most compact and thoughtful English essayist; *Milton* — as the poet of the Reformation, and the master of the most sublime rhythms in the language, and in his prose works the most elaborate of sentence-makers; *Butler* (in parts)—as the antipode of Milton; *Jeremy Taylor*—as the sweetest prose-writer of the seventeenth century; *Dryden*—as the herald of a new and more "popular" style; *Pope*—as the culmination of the most polished, clear-cut, and sparkling English; *Swift*—as the most powerful intellect of his time; *Johnson*—as the representative of the massive common-sense of his country, too ponderously, though characteristically, expressed; *Goldsmith* — as the most charming writer of his generation; *Burke*—as the most brilliant rhetorician that the modern world has seen; *Cowper*—as the transition and the link between the age of Pope and the nineteenth century; *Wordsworth*—as the dawn and the bright shining of the new day of English literature, and *De Quincey*, as the most wonderful prose-writer of the nineteenth century.

(2) But it is evident that all the works of these writers cannot be read in school; and a selection from them is, therefore, necessary. Here again common repute comes to our aid and maps out our course for us. In Chaucer, we should probably find it sufficient to read the *Prologue*, or the *Knightes Tale*, or the *Man of Lawes Tale;* in Mandeville, a few chapters of his *Travels;* in Spenser, a book or two of the *Faerie Queene;* in Shakespeare, one or two plays, such as the *Merchant of Venice* or *King Lear* (*Hamlet* is too difficult and super-subtle, while the subject of *Othello* must always keep it out of schools); in *Hooker*, the First Book of his *Ecclesiastical Polity;* in Bacon, twenty of his best *Essays*, such as those on *Envy*, *Great Place*, or *Travaile;* in Milton, the *Lycidas*, the *Comus*, the *Hymn to the Nativity*, and his other minor works, with perhaps one book of the *Paradise Lost;* in Butler, one or two Cantos of the *Hudibras;* in Jeremy Taylor, a few chapters of the *Holy Living* and perhaps a *Sermon;* in Dryden, the *Absalom and Achitophel* and the *Mac Flecknoe;* in Pope, the *Rape of the Lock* and the *Essay on Criticism;* in Dr. Johnson, two or three of his *Lives of the Poets* and the *Preface* to the *Dictionary*, with perhaps *Rasselas;* in Goldsmith, the *Vicar of Wakefield*, the *Traveller* and the *Deserted Village;* in Burke, the *Reflections on the French Revolution* and one of his speeches; in Cowper, the *Task*, the *Progress of Error*, *Truth*, and some of his minor poems, while his *Letters* should be read, were it only for their style; in Wordsworth, the best of his *Sonnets*, the *Lines on Tintern Abbey*, *Laodamia*, and many of his minor poems; and in De Quincey, his *Suspiria de Profundis*, his *Vision of Sudden Death*, and some of his criticisms.

But, even after all this has been done and well done, there are still two things to do. The first is to give the pupil an intelligible and striking view of our literature before Chaucer—that is, from the *Beowulf* of the 5th century—a poem which, like the Iliad, existed only in the memory and not in a written form, for several hundred years—down to Caedmon, Beda, and King Alfred, to the Saxon Chronicle and Chaucer. This ought to be done orally by the teacher, who should, at the same time, write upon the blackboard short characteristic extracts from the works of these authors, and explain and illustrate the growth of the oldest English, with its highly inflected forms, into our present English. The second thing to be done is, to connect every-where the appearance and the work of a writer with the social condition and the political events of the age in which he lived, and to show—as far as this can be shown to a young audience—how these influenced the character and the feelings of the writer. Nothing, for example, can be clearer or more easy to explain than the influence of the two opposite views of politics upon the writings of the two contemporaries, Milton and Butler.

The standing difficulty and perpetual temptation—a difficulty with which the teacher will have constantly to fight, and a temptation which he will have at every moment to resist—is to present to his pupils conclusions the data for which have not been given, and critical results the steps to which have never been taken by the pupils themselves. There is nothing more prejudicial to the young mind—nothing so fatal to its kindly and harmonious growth, as the presence within it of ready-made thoughts, of alien ideas, and of too easily accepted results. The pupil may seem to be in possession of such ideas and conceptions, but he is not; they may seem to be the fruit of his own mind, but they are really dead artificial apples—the witnesses, not of a vigorous, spontaneous life, but of mental poverty and death. The *second-hand* is the deadly foe of original life.

A large part of the benefit of a course of literature will be lost to the pupils, if they are not required, always and every-where, to react with their own mind upon the material they receive, and the forms which they are asked to contemplate. This view demands that, accompanying every step of the course, there should be a well-selected and judiciously chosen set of exercises. Such exercises might include the following: (1) An account of a poem such as Chaucer's *Prologue*, in the pupil's own words,—always avoiding the vile practice of "paraphrasing." (2) A short life of an author, from memory. (3) An abridgment of an important chapter from some prose work. (4) The turning into modern English of a passage from a writer of the 11th or 12th century. (5) A critical comparison between the treatment of the same subject by two different writers. (Thus *Autumn* has been treated both by Keats and Shelley; the *Nightingale* by Milton, Keats, and Matthew Arnold; the *Death of a Friend* by Spenser—in his *Astrophel*—and by Shelley—in his *Adonais*; an *Escape* by Shelley—in his *Fugitives*, and by Campbell, in his *Lord Ullin's Daughter*.) (6) The discussion of separate literary dicta—like the following by Russell Lowell: "Style, like the grace of perfect breeding, makes itself felt by the skill with which it effaces itself, and masters us at last with a sense of indescribable completeness." (This might be at first discussed in the class-room; and then the line of argument and the results would be given in the form of an essay or paper.) (7) The story of a play of Shakespeare. (8) The analysis of some character in a play. There are many others which will naturally occur to the teacher in the course of his work.

The steady purpose to be kept in view in this instruction is to deposit in the pupil's mind a few nuclei of thought, and to collect around these nuclei as large an accretion of cognate ideas from different writers and from different ages as possible. The existence of these nuclei will enable the teacher to preserve unity in his teaching—to link together his lessons with bonds of "natural piety;" and thus to make the thoughtful child the father of the wise and instructed man. And, from the point of view of intellectual training, they will enable him to keep true to the central principle of *repetition without monotony*.

The study of English literature is incomplete unless it include a view of the works of American authors, by whom many departments of the literature of the English language have been greatly enriched. Thus, in poetry, the chief productions of Poe, Whittier, Longfellow, Willis, Bryant, etc., should be classified and criticised, and compared also with the productions of English poets in the same departments. In history, due attention should be given to Prescott, Hildreth, Bancroft, and Motley; and, in general literature, including essays, fiction, etc., Irving, Poe, Hawthorne, Emerson, Tuckerman, Whipple, and a host of others, claim attention. The principles and methods suggested in regard to English authors, in this article, are equally applicable to the American literature of the English language.

Many valuable books of reference have been published on this subject which the teacher should have at hand for consultation. In English literature proper, we may refer to CHAMBERS, *Cyclopædia of English Literature* (3d Ed., 1876—7); ALLIBONE, *Critical Dictionary of English Literature* (3 vols., Phila., 1858—73); CRAIK, *History of English Literature and Language* (London, 1861); TAINE, *Histoire de la littérature anglaise* (Paris, 1864), English translation (N.Y., 1871); SPALDING, *History of English Literature* (N. Y., 1853), a brief manual, good in parts, but very dry, and abounding in conceptions, views, and criticisms which only a mature and widely read person can appreciate; ARNOLD, *Manual of English Literature* (London, 1862),—this has many good points, but is a little confused, and wants perspective; the latter half of the work—the *Critical Section*—is very much like Spalding; SHAW, *A Complete Manual of English Literature*, edited by Wm. Smith, LL. D., with a sketch of American literature, by H. T. Tuckerman (N.Y., 1867); MORELL, *Biographical History of English Literature*, full of lessons useful to young persons; COLLIER, *A History of English Literature* (N.Y., 1867), a brief and useful manual;

Cleveland, *A Compendium of English Literature*, from Mandeville to Cowper (Phila., 1848), and *English Literature of the Nineteenth Century* (Phil., 1852), also *Compendium of American Literature* (Phila., 1859); Underwood, *A Hand-Book of English Literature — British Authors* (Boston, 1871), and *American Authors* (Boston, 1872); Duyckinck, *Cyclopædia of American Literature* (2 vols., N. Y., 1856). Of series, the following may be mentioned: *The Clarendon Press Series*, one of the best published, is edited by men who know the English language and understand their subject; *Chaucer*, by R. Morris, is one of the most carefully edited books in any language; the *Shakespeare Plays* are also well done. *Storr's Series* is also excellent; many of the books are edited by teachers, who understand best where pupils are liable to meet with difficulty. Of the *London Series*, only one book has, as yet, appeared—*Bacon's Essays*, edited by E. A. Abbott. This is, however, a model of its kind, showing how a work like the *Essays*, full of weighty thoughts and precious English, ought to be edited.—See also Marsh, *The Origin and History of the English Language* (N. Y., 1862); and Reed, *Lectures on English Literature* (Phila., 1855).

ENTHUSIASM is an emotion of so strong a kind as to beget self-forgetfulness, and to awaken the most powerful energies of the mind. When made to rest upon an admiration of the good, the true, and the beautiful, it becomes an educational stimulus of a very useful and effective character; it must not, however, be permitted to supersede the exercise of conscience, or the sense of what is right, and thus degenerate into moral weakness. Earnestness, rather than enthusiasm, should be the quality inspired by the educator; and this is to be effected through the force of example, because the sympathetic influence of the true teacher upon the mind of his pupil is almost without limit. Especially should that spurious kind of enthusiasm be repressed which is characterized by a habitual excitement about every thing that is new, and which tends to destroy every thing that is rational and stable in the character. Enthusiasm is an exceedingly important quality in the teacher as well as in the pupil; indeed, a teacher can scarcely meet with any true success in his profession who is not enthusiastic in his devotion to it. While this is true of those engaged in any vocation, it is peculiarly the case with the educator; since the effectiveness of his work depends so largely upon his personal zeal. The best results, perhaps, of his labors are those which he accomplishes by what has been aptly called *unconscious tuition*.

EPÉE, Charles Michel, Abbé de l', a noted French teacher of deaf-mutes, and the founder of the system of instructing the deaf and dumb by means of a language of signs, was born at Versailles, Nov. 25., 1712, and died in Paris, Dec. 23., 1789. He was at first an ecclesiastic, but was suspended from the priesthood in consequence of his Jansenist opinions. While living a life of literary leisure in Paris, he, in 1755, chanced upon two deaf-mute sisters whose education had been commenced by Père Vanin, but who were then, in consequence of his death, without the means of instruction. De l'Épée took so great an interest in their condition, that he determined to undertake the task of teaching them. He at first continued the method of Vanin, that of pictures, and then tried articulation; but being dissatisfied with these methods, he conceived the idea of using a system of signs. He succeeded so well that he took others under his instruction, and soon organized a school which he continued, at his own expense, till his death. It is said that, even in his 76th year, he deprived himself of fuel in order to support his school. Joseph II. of Austria and Catherina II. of Russia offered him royal gifts, but he declined them; as his great wish was to obtain the royal endowment of an institution for deaf-mute education. His desire was not realized till after his death. A bronze statue has been erected at Versailles to the memory of De l'Épée, and a bas-relief placed by citizens of Sweden in the church of St. Sulpice. In 1855, the centennial anniversary of the establishment of his school was celebrated at Paris by a large concourse of persons, including delegations from many of the countries of Europe. He wrote a work entitled *Institution des sourds et muets* (2 vols., Paris, 1774), which was revised and republished under the title of *La véritable manière d'instruire les sourds et muets* (Paris, 1784). F. Berthier, a deaf-mute, wrote his biography (*L'Abbé de l'Épée, sa Vie, son Apostolat, etc.*, 1852). — See also I. Valette, *Vie de l'Abbé de l'Épée* (Paris, 1857); and Bébian, *Éloge de C. M. de l'Épée* (1833).

EPISCOPAL CHURCH, in the wider sense of the word, is applied to any church having an episcopal form of government. In a narrower sense, it is commonly used as the collective name of the churches which had their origin in the English Reformation under Henry VIII. The most important of these bodies are the Church of England, the Church of Ireland, and the Protestant Episcopal Church of the United States. The Church of England and the Church of Ireland constituted, from 1801, in which year the Act of Union between England and Ireland was passed, until Jan. 1., 1871, when the Church of Ireland was disestablished, only one body under the name of the *United Church of England and Ireland*. Now each of these churches is an independent body, as are also the Scotch Episcopal Church and the Protestant Episcopal Church of the United States. In 1867, the bishops of all these churches assembled in a Pananglican Council, under the presidency of the Archbishop of Canterbury, to deliberate on the common interests of these bodies. We shall treat of these churches separately.

I. *The Church of England.*—The parent body is the Church of England. When its connection with the see of Rome was severed, under Henry VIII., the avowed intention was to return to the purity of the primitive church and to retain its creed and its discipline. The doctrinal standards of the church are, after the Scriptures, the Book of Homilies, the Thirty-Nine Articles, and the Prayer-Book. There are within the church three widely differing schools, known as the High Church, the Low Church, and the Broad Church. The High Church men regard the apostolical succession in the three orders of the ministry as a divine institution; the Low Church men generally look upon episcopacy as not essential to the being of the church, and recognize the claims of dissenters to be members of Christ's body. The Broad Church, which is of more recent origin, is tolerant of doctrinal difference; and, while its own tendency is toward what is called *liberal Christianity*, it would keep the platform of the church sufficiently broad to have room also for the high and low church parties. The Church of England is the established church in England and Wales, and the king is its supreme head on earth. England as an ecclesiastical territory is divided into two provinces, Canterbury and York, with an archbishop in each and 25 bishops. Each province has a provincial synod, called a *convocation* and consisting of two houses, the upper house, which comprises all the bishops of the province, and the lower house, which comprises the deans, archdeacons, proctors of chapters, and proctors for the parochial clergy. The convocation is summoned by the archbishop at the command of the king, and its decisions have no legal force, since the regulation of all church affairs belongs to Parliament. As no religious census is taken in England and Wales, there are no official statements of the numerical strength of the church; the population connected with it is variously estimated at from 50 to 77 per cent of the entire population. As the Church of England is established by law, most of the great institutions of learning, including the national universities of Oxford, Cambridge, and Durham, and King's College, London, are under its control. All these four institutions have a number of theological chairs, and until recently (1856) academic degrees were conferred by them only upon candidates who had subscribed to the thirty-nine articles. All the Great Public Schools and the large majority of Grammar Schools are under the management of clergymen of the Church of England. The study of theology can now be pursued at any of the universities which have been named, or in one of the theological seminaries which have been founded by the bishops since the beginning of the present century. According to the "Kalendar of the Church of England for 1876," the Church of England had, in 1875, theological seminaries at Birkenhead (St. Aidan's, founded 1846), Birmingham (theological department of the Queen's College), Canterbury (St. Augustine's Missionary College, founded in 605, suppressed in 1538, restored in 1848, to educate ministers for the distant dependencies of the empire); Chichester (1859); Cuddesdon (1854); Cumberland (St. Bees, 1816); Lampeter (St. David's College, incorporated 1822); Lichfield (1857); Salisbury (1860); Wells (1840). There were in the same year, under the control of the Church, 23 colleges and schools for the training of school-masters and school-mistresses. The educational societies connected with the Church are (1) The Society for promoting Christian knowledge, founded in 1698; (2) The National Society for promoting the education of the Poor in the Principles of the established Church throughout England and Wales, instituted in 1811, incorporated in 1817; (3) Home and Colonial School Society, for training teachers and for the improvement and extension of education in Christian principles, instituted in 1836; (4) Church of England Education for the maintenance of schools in poor districts. The number of colonial and missionary dioceses of the Church of England has rapidly increased during the present century, and in connection with them a large number of educational institutions have been established. The first colonial see established was that of Nova Scotia, in 1787. In 1875, the whole number of dioceses was 60, of which 5 were in India, 6 in the West Indies, 12 in Africa, 16 in Australasia, and 15 in North America. For further information in regard to the schools of the Church of England in the colonies see the articles on the several provinces of Canada, on India, and on Australasia.

II. *The Church of Ireland.*—Although separated from the Church of England in point of administration since its disestablishment, in 1871, it fully agrees with it in doctrine. The Church has two archbishops, at Dublin and at Armagh, and ten bishops. It is governed by a general synod, meeting annually in Dublin, and consisting of a house of bishops and a house of clerical and lay delegates. The population connected with the Church was, according to the census of 1871, 683,295, or over 12 per cent of the total population. The largest and richest educational institution of Ireland, the University of Dublin, also called Trinity College, is in close connection with the Church of Ireland, to which its officers and professors belong. As religious tests have been abolished, the General Synod has resolved to establish, under the direct management of the Church, a new divinity school. The college of St. Columba, at Rathfarnham, near Dublin, was founded in 1843, to afford a good English education, and to inculcate the principles of this church. The education committee of the General Synod specially designs "to add to the secular training of teachers in the central school of the National Board of Education, as efficient religious instruction as they can impart in the very limited time at their disposal."

III. *Protestant Episcopal Church in the United States.*—The organization of the "Church of England people" in the United States into an independent ecclesiastical body was not completed until 1785; but, before this, Dr. Seabury had been elected by the Episcopalians of Connecticut to be their bishop and had been consecrated, Nov. 14., 1784, by three Scottish bishops. The doctrinal standards of the Church of England were retained, and in the few alterations which were made in the English formularies, it was expressly stated that "this church is far from intending to depart from the Church of England in any essential point of doctrine, discipline, or worship, or further than local circumstances require." The dioceses formerly corresponded in number and extent with the states; but, in 1834, a division of the state dioceses began. Each diocese has a diocesan convention, which meets annually and is composed of the bishop, clergy, and delegates chosen by the laity. The General Convention, which meets triennially, is composed of all the bishops, who constitute the upper house, and four clerical and four lay delegates from each diocesan convention, who constitute the lower house. The *Report of the U. S. Commissioner of Education for* 1874 mentions the following universities and colleges as being under the control or influence of the Protestant Episcopal Church: College of William and Mary, at Williamsburgh, Va., organized in 1693; Columbia College, in the city of New York, organized in 1754 under the name of King's College; Trinity College, Hartford, Ct., 1823; Hobart College, Geneva, N. Y., 1824; Kenyon College, Gambier, O., 1826; Norwich University, Northfield, Vt., 1834; Burlington College, Burlington, N. J., 1846; St. Paul's College, Palmyra, Mo., 1848; Racine College, Racine, Wisc., 1852; St. Stephen's College, Anandale, N. Y., 1858. Nebraska College, Nebraska City, Nebr., 1865; Lehigh University, S. Bethlehem, Pa., 1866; Missionary College of St. Augustine, Benicia, Cal., 1868; University of the South, Suwanee, Tenn., 1868. Columbia College, N. Y., which is enumerated in this list, has not, however, a strictly denominational character, as different religious denominations are represented in the board of trustees; but the majority of the board and the presidents of the institution have always belonged to the Protestant Episcopal Church. Beside these institutions, 14 schools for the superior instruction of women are classified as Protestant Episcopal, with a considerable number of academies and seminaries. The oldest theological school of the church is the General Theological Seminary of New York City, which was organized in 1820, and is under the immediate control of the General Convention. The board of trustees consists of all the bishops of the Protestant Episcopal Church, of one trustee from each diocese, of one additional for every eight clergymen, of one more trustee for every $2,000 contributed, until the same amounts to $10,000; and one for every additional $10,000 contributed. Since then, 9 other schools of theology have been organized. The Sunday-Schools of the church had, in 1875, 235,943 scholars taught by 23,448 teachers. The denominational societies for educational purposes are (1) The P. E. Society for the Promotion of Evangelical Knowledge; (2) The P. E. Evangelical Education Society; (3) The General P. E. Sunday-School Union and Church Book Society. The General Convention, at its triennial meetings, regularly appoints a joint committee on Christian education.

EPISCOPAL METHODIST COLLEGE, at Lewistown, Ill., an institution for the education of both sexes, is under the control of the Methodist Episcopal Church, South. It was opened in 1873, and incorporated in 1875. It has a preparatory, an academic, and a collegiate course. Instruction is given in French, German, music, drawing, painting, and book-keeping, for which, except the last, an extra charge is made. The regular tuition fee varies from $20 to $50 per year. For the special business course, pursued separately, the fee is $40 a year. In 1874—5, there were 6 instructors and 89 students (35 preparatory, 27 academic, 13 collegiate, and 14 in special branches). W. S. McKinney is (1876) the president.

EQUATION. See ALGEBRA.

ERASMUS, Desiderius, was born in Rotterdam, Holland, Oct. 28., 1467, and died in Basel, July 12., 1536. His original name, Gerard, he translated into its supposed Latin and Greek equivalents, Desiderius and Ἐράσμιος; these he united to form the new name which he afterwards assumed. In the convent school of Deventer, where he was educated, he distinguished himself so much, that even then it was predicted that he would become the most learned man of the age. After the death of his parents, his tutors sent him to a school at Bois-le-Duc to prepare himself for the priesthood; and, in 1486, a friend persuaded him to enter a convent near Gouda. In 1492, the bishop of Cambray took him into his service, and he was ordained to the priesthood. Five years later, he left for the University of Paris; and thenceforward, he lived in France, England, the Netherlands, and Italy, for the most part independent, or supported by distinguished patrons. He acted as a private teacher here and there, and was for a short time professor of theology and Greek at Cambridge; but he soon resigned, and avoided after that any fixed position. The fame of his learning spread throughout the civilized world, and honorary degrees were conferred upon him by several universities. He boldly attacked Scholastic theology, and worked most powerfully to revive classical learning. This he did as well by the clearness of his own style and by his classical knowledge as by the satire and ridicule which he directed against the Scholastics. For a long time the Reformers regarded him as in sympathy with them, but he soon separated from them and was even involved in a literary conflict with Luther. In personal character, he was egotistic, timid, and undecided, — faults which became especially prominent at that period of the Reformation. He contributed little to the profound thinking of his time, but was a critic and a scholar rather than a philosopher; nevertheless, his unbounded powers of satire served to wrench men violently out of their accustomed mode of thinking, and, in this way, he acted as a powerful ferment, especially in the revival of classical studies. His great acquaintance with classical authors and his mastery of the Latin language made his ridicule the most effective possible against the dense ignorance of his opponents. His two most famous works in this direction were his *Moriæ Encomium* (*Praise of Folly*), published in 1512, and the *Colloquia Puerilia* (*Children's Talks*), in 1518. The former derided the dialectical labyrinth in which the theologians had lost themselves, the syllogisms of the Scholastics, and the zeal with which they persecuted and condemned every opinion which differed from their own. The latter contains conversations upon almost every thing, but, at the same time, is full of satires upon the monks, a cloister life, pilgrimages, etc. This book was condemned by the Sorbonne, forbidden in France, burned in Spain, and prohibited in Rome to all Christendom; nevertheless, both works exerted a tremendous influence. In 1516, Erasmus published an edition of the Greek New Testament with a Latin translation, which worked powerfully in the interests of the Reformation. Of his educational works, the most important are: *Adagia* (*The Adages*), published in 1500; *De Ratione Studii* (*Of the Order of Studies*), in 1512; the translation of Theodore Gaza's Greek grammar; and *Institutio Principis Christiani* (*Education of a Christian prince*) in 1516. In 1526, he published a book upon Christian matrimony, the last section of which treats of family culture.

Erasmus divides education into four parts: (1) Religious-ethical culture; (2) Intellectual culture; (3) Material culture; (4) Formal culture. By the third division is meant cleverness or skill in our daily labors; and, by the fourth, a knowledge of the amenities of cultured society. This division, however, was not very strictly observed by him. He regarded the institution of marriage as of the highest importance for the proper culture of children. He gives many rules, partly medical and partly moral, upon the way in which matrons should live in order to secure the best results for their children. The greatest care, he asserted, should be taken with young children to prevent vanity and vice from springing up. Good birth is much, but good education is more. In the weight which he placed upon education in comparison with inherited tendencies, Erasmus incurred the charge of Pelagianism. Indeed, in his work *De Pueris statim ac liberaliter instituendis*, he expressly refers the chief part of so-called original sin, to temptation and bad example. Instruction proper should not begin before the seventh year. Upon the subject of teachers and school-houses, Erasmus is never tired of pouring out a flood of ridicule. The greatest care should be taken in the selection of teachers; and if possible, instruction should be private. The contagion of great schools ought to be guarded against. A clear pronunciation, as well as facility in reading and writing, is an absolute necessity for all classes. Rich parents, however, should not fail to teach their children some trade. The study of language should precede the study of things, as a knowledge of things can be reached only through language. The first thing to study is Greek and Latin grammar, for nearly every thing worth knowing is found in these languages. They should also be studied together, as their near relationship lightens the labor of acquiring them. The grammatical rules must be as few and precise as possible; and the study of language should be carried on rather by reading than by learning rules by heart. As soon as any one has a fair foundation in the languages, he should proceed to study things. The best sources for this study are the Greek authors. Care should be taken to strengthen the memory, and the best means are a right understanding of the subject, a proper order of thought, and careful distinction. The notion that all Latinity must be Ciceronian filled him with incredible disgust. The study of Latin ought to include all the authors, and those pretended Ciceronians who will hear of nobody but Cicero were intolerable. The pseudo-classical enthusiasm which could find nothing valuable in any other literature also came in for condemnation. Above and before all else, is religious instruction important. The minds of children must be so filled with the great facts of the Christian religion, that it shall seem to them the greatest reality of life. The world and life must always be spoken of as under the immediate control of God. If good seed be sown in this way, the best fruit may be looked for; still the most important means of teaching morality is by example.

Erasmus insisted also upon similar instruction for girls. It is sufficient according to many, he says, to keep a girl shut up and away from men until she is married, while often enough she is more injured by shallow women than by an association with men. Chastity must of course be maintained; but she alone is chaste who knows what chastity is, and how to maintain it. Innocence suffers chiefly from bad example; and parents ought to be careful to do nothing unbecoming in the presence of even their youngest daughters. He also inveighs severely against love songs and romances, lascivious dances and pictures. Girls, too, ought to receive a liberal education. The multitude holds it to be folly, but wise men know that nothing is more advantageous to the morals of women than extended knowledge.

An edition of the works of Erasmus was published, after his death, by Rhenanus, at Basel (9 vols., 1540—41); a more complete edition was published by Le Clerc, in Leyden (10 vols., fol., 1703 — 6). Biographies of Erasmus have been published in English by Jortin, Knight, Charles Butler, and R. B. Drummond (2 vols., London, 1873).

ERIGENA, John Scotus, one of the greatest philosophers and scholars of the middle ages, was born in the beginning of the 9th century in one of the British Islands (probably Ireland), and died about 880. Charles the Bald appointed him head-master to the court school of Paris, which under his direction made so great progress, that it was no longer called *schola Palatii*, but *Palatium* *scholæ*. His instruction, which was confined chiefly to philosophy and the classics, gave a great impulse to the progress of philosophical studies. As his own philosophical views resembled, in some respects, those held by the Neoplatonists of Alexandria, he has been called the last of that school; at the same time, he is regarded as the first forerunner of the Scholastics. Special works on Erigena have been written by Staudenmaier (1834), Taillandier (1843), and Huber (1861).

ERNESTI, John August, a German philologist and educator, born August 4., 1707, in Tennstädt, Thuringia; died September 11., 1781. In 1731, he became connected with the *Thomas School* at Leipsic; and, in 1742, he was made professor at the university of the same city, in which position he remained until his death. His chief fame rests upon his philological studies and writings. He edited a great many classical works, and was a most enthusiastic Humanist. His work on the interpretation of the New Testament (*Institutio Interpretis Novi Testamenti*, 3d edit., 1775; English translation by C. H. Perrot, Edinburgh, 2 vols., 1833—43) opened the way to a freer exegesis of the Scriptures, and is regarded as a forerunner of the later rationalistic criticism. The sum of all culture lay, for him, in the classics. "They unite beauty of content with beauty of form; and out of them one wins political sagacity, practical wisdom, and moral culture." According to his method, less weight is placed upon grammatical rules than upon diligent reading, which he thought the best way to learn to read and write Latin fluently. This reading, too, should be rapid, taking in whole books in a short time; this he thought a better way of acquiring the spirit of a language than spending weeks upon single sentences with grammar and dictionary. Literal translation he banished, and insisted upon an acquaintance with the public life of the ancients, in order to understand them rightly. Besides his classical works, Ernesti published a book upon the elements of various studies (*Initia Doctrinæ Solidioris*). It treats of arithmetic, geometry, and the elements of philosophy. These are divided into five parts: (1) Metaphysics, embracing ontology, psychology, and natural theology; (2) Dialectics; (3) Morals, embracing ethics and the law of nature; (4) Politics; (5) Physics. The high estimation in which Ernesti was held in Saxony, is shown by the fact that his system was adopted by the state Latin schools in 1773, and remained almost entirely unchanged until 1835.

ERSKINE COLLEGE, at Due West, Abbeville Co., S. C., under the control of the Reformed Presbyterians (the Associate Reformed Synod of the South), was founded in 1839. It has large and commodious buildings; libraries, containing 12,500 volumes; a well-selected geological cabinet; a philosophical and chemical apparatus; together with an excellent equatorial, refracting telescope, mounted in an observatory which affords a magnificent view of the heavens. The amount of its productive funds is $45,000. There is a preparatory course of two years, and a collegiate course of four years. In 1874—5, there were 5 professors, 77 students (56 collegiate, 13 preparatory, and 8 irregular), and 356 *alumni*. The Rev. W. M. Grier, D. D., is (1876) the president.

ESTHETIC CULTURE. Esthetics (Gr. *αισθητικός*, from *αισθάνεσθαι*, to perceive), the science which treats of taste and its object, the beautiful in nature and art, has been recognized, since the middle of the last century, as an independent branch of philosophy. Depending, as it does, upon the exercise of a special faculty of the mind, it forms a part of the basis of a complete and harmonious education. However well the intellect, the will, or the conscience of an individual may have been trained, if esthetic culture is wanting, he must continue rude and unrefined; and, hence, in a comparison of nations which are esthetically cultivated with such as are deficient in this respect, we find a marked difference in the degree as well as in the general character of the civilization which they respectively present. The esthetic element, however, cannot be wholly wanting. Even the rudest nations or the most barbarous tribes manifest delight in those objects which satisfy their natural sense of the beautiful. Like children, they feel an intense fondness for showy ornaments, uncouth pictures and images, harsh and discordant music, and grotesque dances. The love of these things springs from the esthetic principle in their minds, in its uncultivated and partly undeveloped condition. Their perceptions of the beautiful are, like their thoughts and their reasonings, processes unregulated and misdirected. They have, also, the moral sense—the sense of right and wrong, but not knowing how to distinguish right from wrong, they often conscientiously perform acts which, judged by a proper standard of rectitude, are reprehensible in the highest degree; for conscience is only the general impression that a distinction between right and wrong exists, not a power to discriminate between specific right and wrong. In the same manner, the esthetic principle is the sense by which the mind, in a general way, distinguishes between what is beautiful and what is ugly; but it does not teach specifically what objects are beautiful. Hence, however advanced persons may be in esthetic culture, they will still differ to some extent in this specific discrimination. This difference we attribute to a diversity of taste, the word *taste* being used to designate the esthetic principle or faculty of the mind. We find, also, the same diversity in the exercise of the moral sense, in the absence of a settled standard, some persons regarding as worthy of approbation the same act that others look upon as decidedly sinful.

The aim of esthetic education must, therefore, be to cultivate the sense of the beautiful, *i. e.*, the taste, (1) by showing what the elements of beauty are, and thus establishing in the mind a proper standard of the beautiful; (2) by presenting to the mind simple forms of beauty, for the purpose of illustrating this analysis of the elements, and also impressing them deeply upon the mind, as the foundation of esthetic culture; and (3) by practice in criticism, so that the mind may be trained to judge whether in any complex object, either of nature or art, the elementary principles of beauty are present, and in their normal or proper combination. The elements of beauty are to be sought for in the constitution of the human mind; and, therefore, our knowledge of what they are and how they are to be combined must be derived from experience and observation, upon the results of which *esthetics* as a science must be based. The educator must, antecedently to the exercise of his professional skill, have acquired a knowledge of this, just as the teacher of mathematics or of physics must be versed in those branches, before he learns how to teach them; but with this difference, that in esthetical culture, it is the faculty that is immediately addressed, the primary object being disciplinary; while in most other departments of instruction, discipline is a secondary object, the primary aim being to impart a knowledge of the subject taught. To illustrate, we do not, in elementary schools, teach *esthetics* as such; but we strive to cultivate the esthetic faculty by instruction in drawing, painting, music, etc. (See ART-EDUCATION, DRAWING, and MUSIC.) In this department of teaching, the practical value of the subjects themselves is a consideration of great importance, but the development of the pupil's taste is indispensable to any true progress, and, therefore, during the earlier stages at least, must be the primary aim of the educator. When the mind has become enriched with varied forms of beauty, the mechanical skill will soon advance to the degree requisite to give them expression. This work commences in the kindergarten, and is continued in the object lessons of the primary school, by means of varied exercises in *form* (q. v.) or *color* (q. v.) The most rudimental exercises in drawing should have a strict reference to this principle; that is to say, the pupils should be required to delineate not uncouth figures, but simple forms of beauty. The hand and the eye may be trained, it is true, by practice in drawing any forms, whether beautiful or not; but the taste is to be developed and cultivated as well; and, therefore, only such forms as appeal to the esthetic sense should be, at first, presented. The elementary forms of the script letters are illustrative of the esthetic principle; and, hence, writing is a means of esthetic culture. The letters themselves being, however, complex forms, it is held that rudimentary drawing should precede writing. "The experience of many good teachers," says Wickersham, "seems to prove that pupils should receive instruction in the elements of drawing before they begin to write, and that such lessons are better calculated than any others to aid the pupil in attaining the power of conceiving forms correctly."

Esthetics is not only concerned in the beauty of forms; it embraces the objects of every bodily sense, and also of what may be called the inner sense,—a discriminative consciousness of the beautiful in thought and action, which the rhetorician, the poet, and the orator recognize and address in their several spheres of activity. That part of esthetics which depends upon the objects of hearing is cultivated by means of music, which is the expression of the beautiful in sound. The same guiding principle is applicable to instruction in this as to the teaching of form. Simple melodious combinations, regular and beautiful in themselves, should be constantly employed; all that is harsh and dissonant should be avoided. (See MUSIC.) The beauty of composition, that is, rhetorical beauty, depending upon subtler principles, requires a more careful treatment in education. Habit and association, however, play an important part in this branch of esthetic culture; and, therefore, the child, even from its earliest years, should be accustomed to hear only chaste, pure expressions; and the most familiar colloquialisms should be entirely free from what is coarse and vulgar, and especially from slang. The esthetic element in poetry cannot be addressed until an advanced stage of culture has been reached. Poetry is the expression of the beautiful by means of words; it embraces rhetorical beauty, and the beauty of thought and action, as well as of external forms.

From what has been said, it will be quite obvious that teachers themselves should possess esthetic culture, and should fully understand the peculiar function of this department of education in a harmonious development of the human mind. Nothing with which the young pupil is brought in contact should be of such a character as to offend the finest taste. What may be called the esthetics of the school-room should receive the most careful attention. There are, in every school-room, resources for producing pleasant impressions. The furniture should be neat and tasteful, and should be kept in precise order; the apartment should be scrupulously clean; and, as far as possible, should be embellished with pleasing natural objects, such as flowers, plants, shells, etc.; as well as with simple works of art,—pictures, busts, etc. Maps, globes, and other school apparatus, kept in good order, and arranged in the school-room in a proper manner and ready for use, will have a pleasing and happy effect on the minds of the pupils. The following are the observations of a practical teacher who has evidently learned to apply the esthetic culture of her own mind to the simple purposes of district school instruction: "Much can be done toward making a room pleasant by a skillful seating of pupils. There are harmonies of proportion and color to be observed. A girls' school always seems brighter than a boys' school. The colors of the dress of girls give warmth to the room in winter, and the light clothing of summer gives an air of freshness and coolness. The eye requires that the pupils shall be graded from rear to front according to size. A haphazard arrangement in this regard is never satisfactory.... But, after all, the soul of the teacher has greatly to do with the beauty of the school. A light glows in the face of the conscientious, gentle, sympathetic teacher, which illuminates all the room with its brightness. In the reflection of her own character, she sees in the seats truthfulness, confidence, respect, and love; and so the spiritual beauty sanctifies and glorifies all the beauty secured by ornamentation, by any and every device in material things."

Among the foremost writers on esthetics, are Baumgarten, who first established the claims of esthetics to be classed as a separate science, Hegel, Schiller, Vischer, Carriere, in Germany; Cousin, Jouffroy, and Taine, in France; Dugald Stewart, Hutchison, Alison, Jeffrey, and Payne Knight, in England; and Henry N. Day (*The Science of Esthetics*, New Haven, 1872) and Bascom (*Lectures on Esthetics*, New York, 1872), in the United States. A critical history of esthetics, from Plato to the present times, has been written by Schuster (*Kritische Geschichte der Aesthetik*, Berlin, 1872).

ETIENNE, or **Estienne, Henry and Robert.** See Stephens.

ETON COLLEGE. See England.

ETYMOLOGY (Gr. *ἐτυμολογία*, from *ἔτυμον*, the true meaning of a word), a department of philological science which explains the derivation of words and their literal meaning. This is historical etymology. (See English, Study of.) The term *etymology* is also applied to that part of grammar which relates to the classification of words as parts of a sentence, and their various inflections, used to indicate their relations to one another, or modifications of the general ideas which they express. This is grammatical etymology. (See Grammar.) As a branch of elementary instruction, it teaches the component parts of words,—root, prefix, and suffix, and by explaining the primitive meaning of these parts in the language from which they are derived, shows the exact literal meaning of the words. (See Words, Analysis of.)

EUREKA COLLEGE, at Eureka, Woodford county, Ill., under the control of the Church of the Disciples, was founded as an academy in 1849, and chartered as a college in 1855. The college campus is in a spacious grove of forest trees. There are two substantial brick buildings. The endowment fund is nearly $50,000, only about half of which is now available. The institution has libraries containing 2,500 volumes, apparatus for the illustration of the physical sciences, and a museum of geology and natural history. It comprises five departments; namely, college, Bible (preparatory to the ministry), normal, business, and music. The college department comprises a preparatory, a baccalaureate (similar to the ordinary college course), a scientific, and an academic course. The scientific course differs from the baccalaureate in omitting the Greek and one half of the Latin. The academic course omits the Greek, one half of the Latin, two terms in algebra, analytical geometry and the calculus, and adds French or German. French or German may be substituted for the Latin of the scientific and the academic course. The college year is divided into three terms, and the tuition fee per term is as follows: preparatory course, $8; Bible, free; college, $10; normal, $10. In 1874—5, there were 6 professors, 215 students in the college department, 27 in the Bible department, 68 in the commercial department, and 47 in the music department; total, deducting repetitions, 234, of whom 146 were males and 88 females; the number of *alumni* was 74. The presidents have been as follows: Wm. M. Brown, George Callender, C. L. Loos, B. W. Johnson, H. W. Everest, A. M. Weston, and B. J. Radford, the present incumbent.

EVANGELICAL ASSOCIATION, a religious denomination in the United States, which took its rise in Pennsylvania in 1800, through the labors of the Rev. Jacob Albright, who desired to reform the German churches in eastern Pennsylvania. The confession of faith and the polity of this church are so similar to that of the Methodist Episcopal Church, that it has sometimes been called the German Methodist Church. Like the Methodists, it has annual conferences and a general conference, which meets every four years. The form of government is episcopal, but its bishops are elected only for a term of four years, not, as among the Methodists, for life. For 25 years, the church had to struggle against violent opposition; but since then it has made rapid progress; so that, in 1875, it had 19 annual conferences with 836 itinerant preachers, 519 local preachers, 95,253 members, and 1,233 churches. The church arose among the Germans, and has remained to a large extent a German-speaking body. Two of the annual conferences are outside of the United States, the one in Canada, and the other in Germany. The first college of the church, the North-western College, was organized at Plainfield, Will Co., Ill., in 1861, and received a charter in 1865. In 1870, the college was removed to Naperville, Du Page Co., Ill., and has now an endowment fund of $100,000. Its annual expenditures amount to about $14,000. (See North-western College.) A theological school, The Union Biblical Institute, has been established in connection with the college, at the same place, having an endowment fund of $30,000. Other educational institutions under the control of the church are the Union Seminary, at New Berlin, Pa., and the Ebenezer Orphan Institution, at Flatrock, Ohio. Great attention is given to the Sunday-school cause. The number of schools of this class was reported, at the General Conference of 1875, as 1,509, with 16,875 officers and teachers and 90,090 scholars.

EVENING SCHOOLS, or **Night Schools,** have been established in many countries, generally in large cities, as a part of the public-school system, for two purposes: (1) to give to those of the school population who cannot avail themselves of the advantages of the day school, an opportunity to obtain an elementary education; and, (2) to enable adults who have finished the course of instruction in the public day school, to acquire additional knowledge, especially on subjects relating to their particular occupations or professions. In England, France, Italy, and Germany, there are elementary evening schools for children employed in factories; in the United States, a large portion of the pupils of evening schools consists of persons who have passed the school age. In most cases, the school regulations exclude all children below a certain age, and also provide that no pupils shall be admitted who are not engaged in a useful occupation during the day. In those countries where education has been made compulsory, the evening schools are almost exclusively schools for adults, being chiefly intended to give to young apprentices, mechanics, clerks, or peasants an opportunity to continue their school education. (See ADULTS, SCHOOLS FOR.) In Germany, the Sunday-schools long served for this purpose, as the keeping of evening schools on week-days is of comparatively recent origin. But wherever evening schools have been established, they are preferred by a large number of pupils. In some countries, the Sunday school and the evening school are combined, the pupils being taught in some subjects, such as drawing, on Sundays, and in others on the evenings of the week days. Evening high schools, which offer instruction in the higher branches of study, or afford technical instruction to artisans and others, are comparatively rare. Such are the Evening High School and the schools of the Cooper Union (q. v.), of the City of New York, the Maryland Institute Art Night Schools in Baltimore, and the O'Fallon Polytechnic Institute of St. Louis. In some of the large cities of the United States, foreigners derive very great benefit from the evening schools, in the instruction afforded in the English language by teachers who speak the language of the students. Free evening drawing schools are quite numerous in many parts of the United States as well as in some of the countries of Europe. For statistics in regard to the evening schools in the different cities, see their respective titles. In England, according to the "New Code of Regulations," of 1876, the managers of an evening school which has held not less than forty-five sessions in the course of a year, may claim a government grant. Special provisions regulate the examination of each of these schools. The number of night schools in England, in 1875, was 73, with 38,597 male pupils, and 8,785 females. In Würtemberg, local magistrates are authorized to enforce the statutes by which all mechanics who have attained the 16th year are required to attend the technical complementary evening schools, thus making evening school instruction compulsory. In the city of St. Louis, evening school pupils are rewarded for regular and punctual attendance, good behavior, and attention to study, by a year's free membership in the public library. More than 1,000 of these pupils have obtained this award during a single term by attending sixty evenings out of the sixty-four.

In the organization and management of evening schools, great care should be taken to adapt the subjects and processes of instruction to the age, character, and circumstances of the pupils. Those methods which are particularly appropriate for the education of children, and most of the machinery of school-keeping which is associated with childhood should be discarded as distasteful to the more mature years and more serious purpose of evening school students. The studies pursued should be practical, and, as far as possible, should have an immediate reference to the pursuits and occupations of the students. The usefulness of the knowledge imparted in this class of schools, is paramount to any consideration of mental discipline, the latter being of secondary importance. On this principle, drawing, bookkeeping, penmanship, and phonography, have proved eminently popular branches of study. The same principle should guide in the selection of teachers, none but those of superior tact, experience, and skill being appointed to this work. They should also be of mature years and character. A young man or a young woman who attends school with an earnest desire for self-improvement, is not willing to submit to trivial, perfunctory, or formal school-teaching; and the very seriousness of the student's purpose renders his judgment of the teacher extremely critical and severe. Mere amateurs in teaching should never be allowed to trifle with the time of evening school students. When the teaching is of a right character, the discipline will take care of itself, provided the organization of the school is correct, and the rules proper and judicious. None but those who are zealous in study should be permitted to attend these schools. Evening schools cannot be efficient reformatory institutions unless especially organized for that purpose. In the Report of the Superintendent of Schools of the City of New York for 1871, there is found an enumeration of the difficulties experienced in conducting the evening schools of that city, probably experienced also in most other places. These are, briefly, as follows: (1) The difficulty in obtaining for these schools teachers of the requisite capability (the superintendent remarking, that "teachers of mature judgment, extensive general information, tact in management, and, above all, an earnest spirit, are especially needed; (2) The imperfect organization of these schools, owing to the haste with which pupils are admitted, and the consequent inaccuracy of their classification; (3) Pupils are admitted at too early an age; very young boys and girls (under 12) do great injury to the school, being generally in a physically exhausted condition, and so unfit for any mental exercise as to be often found asleep at their desks; besides, the older pupils are disgusted and repelled by being classed with these young children; (4) The exercises are dull and uninteresting to that large class of the pupils who, feeling deeply the need of elementary education, are willing to devote themselves laboriously, during the winter evenings, to obtain it; (5) The absence of instructive and interesting lectures, calculated to make a deep impression upon the minds of the pupils, enkindling an ambition for excellence and a love of rectitude and truth. This statement of deficiencies may very well serve to show what conditions and characteristics are requisite to insure efficiency in this class of schools. There can be no doubt that such schools constitute an essential part of every common-school system, particularly in large communities, in which many children are obliged to leave the day school before they have acquired even the rudiments of an education. The office of technical schools, while different, is no less important, since an increase of skilled labor in any community is one of the most valuable elements of its wealth and prosperity.

EVERETT, Edward, an illustrious American orator and statesman, distinguished for his advocacy of common schools, and his liberal and enlightened views in regard to education in general. He was born in Dorchester, Mass., April 11., 1794, and died in Boston, Jan. 15., 1865. At the early age of 17, he graduated at Harvard College, with the highest honors, and became a tutor in that institution, at the same time pursuing divinity studies. In 1813, he was settled as pastor of a church in Boston, and soon became distinguished for the eloquence of his sermons. Subsequently, he was for several years Eliot professor of Greek in Harvard College. His public life began in 1824, when he was elected to Congress, in which he served continuously for ten years. In 1835, he was elected governor of Massachusetts, and was three times re-elected. In 1840, he was appointed minister plenipotentiary to England; and in this position, was enabled to perform very important services for the United States. On his return, in 1845, he was elected president of Harvard College. In 1852, he was appointed to succeed Daniel Webster as secretary of state, on the decease of that eminent statesman, and served during the last four months of Fillmore's administration. The next year, he was elected to the United States senate; but, in consequence of ill health, he resigned his seat the year after. In 1860, he received the nomination of vice-president of the United States, on the ticket with John Bell of Tennessee as president. His oration on Washington, repeated about 150 times in various parts of the United States, added greatly to his fame as an orator as well as a patriot, inasmuch as the proceeds from its delivery were in the main contributed to the Mount Vernon fund. During the civil war, Everett adhered strongly to the cause of the Union, which he benefited by many eloquent and patriotic speeches. In 1863, he delivered the address at the consecration of the national cemetery at Gettysburg, Pa. His last address was delivered in Faneuil Hall, Boston, in behalf of the suffering people of Savannah, only a few days before his death. It is not intended here to give more than a brief reference to his career as a statesman; as an orator, he was distinguished for dignity and elegance in delivery; and his published orations, which fill four large volumes, contain an amount of intellectual wealth of priceless value, still further enriched by a style of unsurpassed elegance. In relation to education, the most valuable of these addresses are, *The Education of Mankind*, delivered in 1833; *Education favorable to Liberty, Morals, and Knowledge*, in 1835; *Superior and Popular Education*, in 1837; *Education the Nurture of the Mind*, in 1838; *Importance of Education in a Republic*, in 1838; *Normal Schools*, in 1839, in which he reviewed the history of normal-school instruction, and advocated, in the most intelligent and eloquent manner, the necessity of special training and instruction for teachers; *University Education*. in 1846; *Conditions of a Good School*, in 1851; *Education and Civilization*, in 1852; and *Academical Education*, 1857. His various utterances in regard to education have been collected and published in a single volume. A full collection of his *Orations and Speeches on Various Occasions* has been published in four volumes (Boston, 1869).

EXAMINATIONS constitute an important part of the educator's work in order to test the result of what has already been accomplished, and to incite his pupils to additional efforts. While it is perfectly true that the best effects of educational training can be but imperfectly, if at all, tested by any personal examination; yet, there is no other ready and definite method of ascertaining the efficacy of the teacher's work and the proficiency of the student. Examinations, moreover, are of great educative value, if they are conducted on sound principles. The judicious examiner who is master of the subject, while ascertaining what the student has learned, necessarily, to some extent, shows him what he has failed to learn, either in consequence of an imperfect method of study or a lack of attention to certain important parts of the subject. Thus he is taught how to make his future efforts more successful; and, further, by coming in contact with a mind more mature in its operations and attainments, he obtains views of the subject which no amount of study of his own could impart. On this account, examination and recitation should go hand in hand, the student showing, in the first place, what he has learned of the lesson assigned to him, and the teacher then, by skillful examination, demonstrating to him his ignorance on certain points, and in this way instructing him in such things as may be beyond the grasp of his unaided research. Examinations of this kind form an indispensable part of instruction itself; those which occur at the end of certain periods, either for promotion, or for graduation, have in view the exclusive aim of testing the actual progress of the pupil. Indirectly, however, such examinations being anticipated by the student, guide and stimulate his efforts, both in acquiring and remembering. The considerations to be presented in this article will be distributed under (I) *Examinations of Schools;* (II) *Examinations of Teachers;* (III) *College and University Examinations.*

I. *Examinations of Schools.*—This includes (1) examinations for classification and promotion, in which the merits of individual pupils are to be carefully ascertained and compared with a certain standard of attainment, and (2) examinations for official supervision, the object of which need be only to ascertain the methods and skill of the teacher, and the general efficacy of his work, the relative standing of the different pupils of a grade or class not coming under consideration. The latter (*inspectional examinations*) are of great value in every system of instruction, particularly in those in which large masses of children are to be educated, and, of course, a great number of teachers to be employed, for the following reasons: (1) They promote uniformity of instruction; (2) They stimulate the teacher, and guide his efforts; (3) They prevent negligence on the part of those whose duty it is to instruct, train, and discipline the children; and (4) If the results are definitely and discriminatively published and made the basis of commendation or censure to the teacher, they promote emulation among the teachers, and thus incite them to exertion, in order to attain the standard fixed by the course of instruction and the method of the examiner. It is, thus, not only a means of supervising the teacher's work, but also of instructing the teachers themselves. "The teacher," says Beale, "may be very earnest, but an experienced critic of his work may be able to point out where and why he has failed, and, from a larger experience, to suggest improved methods." (See SUPERVISION.)

II. *Examinations of Teachers.*—As a preliminary to their employment in public schools, teachers are required by law to be licensed or certificated. The license is the legal permission to teach; the certificate is the written or documentary evidence that such permission has been given by the properly constituted authority. (See LICENSE, TEACHER'S.) This permission is granted usually after an examination in certain prescribed branches of study. The examination is generally conducted, in the different states of the Union, by the state superintendent of public instruction, the superintendents or boards of education of cities, or the county commissioners of schools. In some places, public examinations are appointed at certain times, and all who desire to obtain the certificate, attend as candidates. In such cases, the examination is generally not competitive, but only qualifying, all who show the degree of scholarship prescribed obtaining certificates. The methods of conducting these examinations are almost as various as the individuals conducting them. When, as is sometimes the case, particularly in the rural districts, the licensing officer has no technical knowledge of education or of schools, the kind of examination (generally oral) is far from being such as is required to test properly either the teacher's knowledge, professional training, or special skill. Perhaps some peculiar vagary or conceit of the examiner, who may be a lawyer, physician, merchant, or perhaps a farmer or mechanic, is made to serve as a procrustean standard by which the merits and defects of all who present themselves are judged. Graduates of state normal schools are generally, *ipso facto*, licensed teachers; inasmuch as the state superintendent has the supervision of these schools as a part of the common-school system of the state.

III. *College and University Examinations.*—In the higher institutions of learning, periodical examinations constitute an essential part of the process of education, which, in recent years, has received much more attention than formerly. "Ours is an age of examinations," says Todhunter, referring to the rapid institution of this system of scholastic inquiry, in various forms, in connection with the English universities. Every point in regard to this system has been carefully discussed, to the most important of which we here refer: (1) The general usefulness and expediency of university examinations; (2) The relative value of written and oral examinations; (3) Also of competitive and qualifying examinations; (4) The mode of estimating and marking the results of written examinations.

(1) Most educators are agreed that there are serious evils connected with the examination system, as there are, indeed, in all systems that incite the diligence of the student by indirect means. Undoubtedly, a deep interest in the subject studied can alone insure the best results; but it is obvious that this cannot generally be awakened in the mind of the student previous to his engaging in the study; and hence the necessity of bringing into play some indirect force. "The love of knowledge and the love of distinction, with the fear of disgrace," says Whewell, "are the two mainsprings of all education, and it does not appear wise or safe to try to dispense with either of them;" but he further remarks with great propriety, "We cannot make the examinations every thing to our students without making the love of knowledge nothing." Examinations, it must be borne in mind, are only a means to an end; namely, a good education, comprehending a sound liberal culture of all the mental faculties; and, consequently, examinations cease to be a benefit when they interfere with this object. On this point, Whewell, in *English University Education*, remarks as follows: "Examinations, or something equivalent, must exist in a university; but when they are considered as the only means of university education, it is easily seen that the education must be bad. For their requisitions must be lowered to the level of the average power of mind and of application which young men possess, in order that university degrees may be the general mark of a liberal education; and, hence, the substance of such examinations cannot be sufficient to exercise and improve the quicker and more capacious intellects. Moreover, for reasons already stated, the knowledge which is acquired for examinations operates less as culture, than that which is obtained under other circumstances. And when the examination is a compulsory one, there is a servile and ignoble in-

fluence breathing about it, since it acts not on the hopes, but on the fears; and holds disgrace and degradation before the eyes of the candidate. Such examinations may be necessary, but they can never be more than a necessary evil; and that system would, indeed, be unworthy of a great and highly civilized nation, in which the machinery of education was all of this structure." In the same connection, Todhunter remarks, "It is easy to refine and elaborate our examination machinery; but the results will scarcely repay the expenditure of money, time, and ability. We cannot by our examinations create learning or genius; it is uncertain whether we can infallibly discover them; what we detect is simply the examination-passing power of the candidates, and this can be adequately appreciated by simpler and less costly processes." This remark can have but little application to the "local examinations" recently founded by the English universities; inasmuch as these tests, while determining the "examination-passing power" of the candidates, also ascertain their special scholarship; and, besides, operate as a powerful stimulus to studious exertion, in the case of thousands of persons anxious to obtain certificates of learning, as well as the things to which they are a passport. They also exert a very important influence on education at large, and tend to elevate the qualifications of teachers. Indeed, it was for this express purpose, that these examinations were established in 1858; and it is acknowledged, that they have been highly successful "in raising the tone of middle-class schools, as well as in widening the area of the influence of the universities." In December, 1875, 4,435 candidates of both sexes underwent the local examinations of Cambridge, and, in June, 1876, 2,141 those of Oxford. "The local examinations," says Beale (*University Examinations for Women*, London, 1875), "have been very useful, especially in girls' schools, bringing them into relation with the national centers of education. The old-fashioned parrot-learning, and slovenly, inexact work have been shown to be worthless, and a better curriculum has been introduced." Of the higher university examinations in England, several are open to women over eighteen years of age. (See FEMALE EDUCATION.)

In the German universities, less resort has been had to examinations than in the United States or England, more dependence being placed on the lecture system, or on the Greek mode of teaching by dialogue. University examinations have been emphatically condemned by some distinguished German educators; but by others they have been advocated as necessary to check idleness on the part of the students, many of whom, it was found, failed to attend the lectures, and others, although present, gave little or no attention to them. Against these examinations in the German universities various objections have been urged; as, (1) that they do not incite to the right kind of study; (2) that they are for school-boys, and, therefore, it is an indignity to subject university students to them; (3) that the number of candidates is too large to admit of a thorough and impartial examination (the oral method being used); (4) that a large share of the examiners lack the requisite skill in examining; and (5) that the results are unreliable, because the students so greatly differ in disposition, temperament, etc., a bashful, though excellent student, being likely to fail, while the confident one, with less merit, comes off triumphantly. Most of these objections are obviously weak, and are satisfactorily answered by Von Raumer (*German Universities*, English translation, by Barnard).

(2) The comparative value of written and oral (or *viva voce*) examinations as tests of proficiency has been much discussed; of course, for the purpose of instruction, the *viva voce* method is indispensable. The object of the examination is an important element in determining this question. When it is simply desired to ascertain the qualifications,—the scholarship, culture, and general characteristics of the person examined, without regard to any precise standard of attainment, the oral method is often preferred; but there are usually some written tests as well. A skillful examiner, who is master of the subject under consideration, can by a few judicious, well-arranged questions ascertain very speedily both the quantity and the quality of the candidate's knowledge; but, of course, this requires skill and experience, as well as good sense and judgment, on the part of the examiner. In the examination of teachers, where there is so much besides mere scholarship to test, the oral method ought not to be entirely excluded. The objections urged against oral examinations may be briefly stated as follows: (1) They are wanting in fairness and thoroughness, because they are necessarily very brief and hurried, and when classes are examined the questioning is uneven, so that a poor student may pass while a meritorious one fails, particularly if the latter is diffident and timid; (2) The questions cannot be carefully prepared, and hence may be quite imperfect tests; and (3) The candidate has no time for proper deliberation, and therefore must often fail to show what his real attainments are. On the other hand, the advantages of a written examination are the following: (1) The same questions are given to each candidate, and, consequently, the test is even; (2) The candidates are left entirely to themselves, without suggestion or aid from the examiner; (3) The questions can be more carefully prepared; (4) The candidate has more time for deliberation in answering; and (5) The examiner has a better opportunity to consider the answers, and to form a just conclusion as to the merits of the candidates. The question of written or *viva voce* examinations in universities has been much discussed in England; and the superior value of the latter has been particularly urged by various eminent professors in the University of Cambridge. In this connection, Todhunter remarks, "I will acknowledge that if only two or three candidates have to be examined, and we have the command

of unlimited time and of adequate examining force, then whatever may be the subject of examination, the *viva voce* method may be not only allowed but strongly recommended. We may ascertain with respect to each candidate both what he knows and what he does not know, and whether he shows evidence of independent power." Still, on the whole, considering the subjects of the examinations and the circumstances under which they occur, he strongly prefers the written method, which is favored by most authorities both in theory and practice.

(3) The remarks already made afford sufficient materials for a judgment as to the comparative importance of competitive and qualifying examinations. The aim of the examination may or may not necessitate any comparison of the merits of different candidates; but when such a comparison is necessary, there is no doubt that a written examination by entirely equal tests should be exclusively employed. For such a purpose, however, the construction of the examination questions should be such as to bring out more than the mere accuracy of the knowledge of the candidate. There should be considerable diversity, some of the questions requiring only brief statements of facts; while others, of a topical character, necessitate fuller expositions, showing the relations of facts to each other and to principles, and thus giving scope for the demonstration, by the student, of his power of reasoning and analysis, as well as of expression. The general requisites for a set of examination questions are (1) that they should be free from ambiguity, (2) that they should strictly refer to what the candidate may be expected to know, (3) that they should be judiciously arranged (difficult questions, for example, not being placed first), and (4) that they should not require more time than is to be given to the particular exercise, so as to make the candidate feel hurried and nervous.

(4) The manner of estimating and marking the results of written examinations requires a careful consideration. The value of each question as a test should be exactly estimated, and the character of the answer given marked accordingly. Any scale may be adopted, but that of 100 is the most convenient and the most generally chosen. Whatever number may be annexed to each question as its specific value, the result can be readily reduced to a per cent, which will thus show the absolute, as well as relative, value of every paper. The system of *negative marks* is advocated by Todhunter; that is, to give marks for correct work, and to subtract marks for errors. The justice of this method he illustrates as follows: "Suppose that one candidate has solved twenty questions all correctly; and suppose that another has also solved twenty questions all correctly, and has attempted four more and failed completely in them; then, assuming that the questions are, on an average, of equal value, the two candidates would be pronounced equal on our actual method. Yet, it may happen that the four failures betray such ignorance and incapacity as to demand some more decisive condemnation than simple want of notice." This method would probably be found impracticable, and the tendency would be to injustice; nor does it seem necessary if the questions are properly weighted, since the omission to answer, or the failure in answering, a difficult question would cause the loss of a large number of marks, and negative marks would be duplicating this loss.—See Whewell, *English University Education* (London, 1838); Von Raumer, *German Universities*, English trans., edited by Barnard (N.Y., 1859); Todhunter, *The Conflict of Studies etc.*, s. v. *Competitive Examinations* (London, 1873); Beale, *University Examinations for Women* (London, 1875).

EXAMPLE, the Influence of. This depends upon imitation and sympathy, two principles of action which are exceedingly potent in the minds of all persons, but particularly in those of children. Its influence among men is shown by the existence of national customs, prejudices, vices, fashions, etc., and by the use of language, which would be scarcely possible without the force of imitation or example. In infancy and early childhood, this principle is the almost exclusive means of education, and the impressions which it makes are so strong and durable, that they are hardly ever obliterated in after life. Parents very rarely appear to realize that they are, by a kind of "unconscious tuition," educating their children simply by what they say and do in their presence. Locke says, "He that will have his son have a respect for him, and his orders, must himself have a great reverence for his son. *Maxima debetur pueris reverentia.* You must do nothing before him, which you would not have him imitate;" and also, "Of all the ways whereby children are to be instructed, and their manners formed, the plainest, easiest, and most efficacious, is to set before their eyes the examples of those things which you would have them do, or avoid.... The beauty or uncomeliness of many things, in good and ill breeding, will be better learnt, and make deeper impressions on them, in the examples of others, than from any rules or instructions that can be given about them." (See *Thoughts Concerning Education.*) The power of example has an important application in the education of the intellect; since, in giving instruction in any department of science or art, the illustrative power of the teacher, in showing to the pupil what it is desired that he should accomplish, has great efficacy in stimulating his efforts, and more especially in fixing in his mind a definite standard to the attainment of which he may direct his aim. Indeed, in every branch of instruction, imitation is one of the most important principles for the teacher to recognize and employ. But it is in moral education that the force of example has its chief sphere of activity. In it is comprehended all that we mean by the *personal influence* of the instructor. His manners, his modes of action and speech, the expression of his countenance, and the tones of his voice, all are constituent elements of this influence. This personal power, it has been well said, is an "emanation flowing from the very spirit of the teacher's own life, as well as an influence acting insensibly to form the life of the scholar." — See *Unconscious Tuition*, by Prof. Huntington, in Barnard's *Journal of Education*.

EXCHANGES, Educational. See Holbrook, Josiah.

EXHIBITIONS, School, are arranged for the public display of some of the ornamental accomplishments of the pupils, such as music, recitation, and declamation, and of other exercises that admit of a ready performance in public, and can be made attractive, such as reading, composition, calisthenics, etc. Exhibitions of this kind are given for the purpose of bringing the school before the public, and popularizing it. Many parents take great delight in seeing their children participate in these public exercises; and, hence, they generally attract a large audience. While they are, in some respects, valuable, their general tendency as they are usually given, is injurious. They pervert not only the regular order of exercises of the school into a special preparation for display, but also the proper aim of the pupils, which should be to make progress in their studies, not to gratify their vanity by the exhibition of superficial accomplishments. Children whose special talents lie in this direction, are apt to be greatly injured by excessive praise for these efforts at display, and are in this way unfitted for any steady exertion. Many teachers, on this account, entirely avoid giving public exhibitions or receptions. Besides, an exhibition does not present the best results of the instruction given, but, chiefly, such accomplishments as are showy. The reading of essays and other compositions, it is true, shows something of the culture, intelligence, and power of expression of the pupils; but, in elementary schools, this must be very limited. In college commencements, the essays being of a higher character, show to a greater extent the students' intellectual development; but, still, they do not at all exhibit their special scholastic attainments, upon which their time and study have been principally expended. On this account, some educators have endeavored to devise a method of showing these attainments in school exhibitions, and in some cases with considerable success. When the classes are so well trained that they can be presented in public with an invitation to any competent person in the audience to examine them, the effect is very interesting, and quite satisfactory, because every suspicion of unfairness is prevented. The following is, in part, the suggestion of a teacher as to the method of giving a school exhibition: (1) Engage a large hall, or use your school room if necessary; (2) Spread out upon tables a portion of the work of the pupils (specimens of penmanship, written exercises in arithmetic, etc.); (3) Place upon the walls the maps and drawings, herbariums, etc., of the pupils, in charge of suitable persons to explain; (4) Let the pupils exhibit cabinets, philosophical apparatus, etc., of their own collection or construction; (5) During the exhibition have the pupils display their musical attainments by singing, etc.; (6) Intersperse dialogues, recitations, declamations, etc., or class examinations, of a suitable character. In this way an exhibition may be made not only interesting to an audience but a useful incentive to the pupils.

The term *exhibition*, in the English universities and Public Schools, is used to denote an allowance, or bounty, paid to the students, under certain conditions, for their maintenance while pursuing their studies in the university. Hence, such students are called *exhibitioners*. (See England.)

EXPULSION is often resorted to in schools in the case of pupils who, by their willfulness, insubordination, reckless and disorderly conduct, or general depravity, cease to be amenable to the ordinary regulations of the school, or are likely to contaminate the manners and morals of the other pupils. It is an extreme measure; and, in public schools, should not be taken until all other proper means to control the pupils have been employed; because it generally deprives these pupils of all opportunity of receiving the education for which the laws of the state provide. Two circumstances can alone justify it: (1) That the pupil is utterly uncontrollable by any of the ordinary means of school government; (2) That the depraved character of the pupil is such as to imperil the welfare of the other pupils. Expulsion, in some places, is used as a substitute for corporal punishment; but the propriety of this has been called in question. (See Corporal Punishment.) In view of the fact that the expulsion of incorrigible pupils must be occasionally necessary under all circumstances, it would appear that a reformatory institution constitutes an essential part of every public-school system. (See Reform Schools.)

EYE, Cultivation of the. The sense of sight is capable of an almost incredible improvement by culture; of this, modern scientific investigations leave no doubt. We see improvement in this respect not only in individuals but in the general visual capacity of whole nations. There can be no question, for example, that, 3,000 years ago, when the civilization of the Chinese came to a stand-still, they were very deficient in the power of seeing perspectively; so that, in spite of all their skill in drawing and painting, their pictures show all objects on the same plane, without any variation of size, or of light and shade, in order to represent the distances and relative positions of the objects depicted. Many proofs might be adduced to show that, in the course of centuries, the human eye has improved in power. The aim of education in this respect is twofold: (1) To improve the physiological conditions of sight, by removing any causes of a morbid state, or by strengthening the physical organ of vision; (2) To cultivate, by judicious practice, the sense of sight, so as to render it more observant, and able to receive more full and accurate impressions of the objects which pass before it. This is of special importance, as of all the senses that of sight is, without doubt, the most far-reaching, and leads to the most numerous and vivid conceptions.

The cultivation of the eye should begin soon after birth, and, for a few weeks, should be confined to keeping the infant from all excessive glare of light; but, at the same time, allowing it sufficient light properly to excite the nervous activity. Children, like plants, need a great deal of sunlight, which, provided it is not dazzling, is the most important agent of both bodily and mental growth. At the first, it should be a reflected, diffuse, and mild light, direct sunlight being admitted only after several weeks, and then gradually. Weak eyes may also be caused by surroundings of but one color, particularly if decidedly brilliant. Hence, it is well to relieve the impression made by a single color, by alternation with its complementary. Red or blue curtains should never be allowed continuously to throw their tinge upon the infant's eye; but, as a rule, subdued colors should be preferred. The power of distinguishing both outlines and shades of color is susceptible of cultivation by means of the slow movement of bodies of different hues before the child's eyes. This is an exercise which is employed in Froebel's nursery education, and is very properly accompanied by singing, because the sense of hearing, having an earlier development, is well adapted to excite the action of sight. After the second or third month, when the infant can wield its hands and arms, the sense of touch should be called into activity in order to correct the impressions made on the eye. Various contrivances may be resorted to for this purpose, among them the suspended wooden globe and colored balls which Froebel suggests for use at this stage of education. As the child learns the meaning of simple language fully one or two years before it is able to repeat the words, it is safe to let it hear the names of the things which it sees and handles, but always in connection with the objects themselves. Thus language fixes, at the age of infancy, the various impressions of the senses, which impart a definite meaning to every word, and thus secure the proper expressions when the child begins to speak. When language has been acquired to some extent, the teacher should, by means of skillful questioning, attract the child's attention to those visible properties and peculiarities of things which, without a trained observation, are generally passed by without notice. It is surprising how much may be instantaneously perceived by a trained eye, and how delicate and far-reaching the sense of sight may become, under circumstances requiring its constant exercise. Thus the practiced astronomer is able to notice the most minute points of light, which the ordinary observer utterly fails to detect. On the other hand, the eye is, of all our organs of sense-perception, the most delusive if it is permitted habitually to gaze at objects without any comprehensive or discriminative view of their peculiarities and less obvious details. It is on this account, that Froebel invented that well-arranged system of kindergarten occupations, by which the free self-activity of the child, stimulated by agreeable intercourse with those of his own age, learns how to employ his sense of sight in an endless variety of pleasurable work, that never ceases to educate both mentally and morally. (See KINDERGARTEN, and OBJECT TEACHING.)

Without any special or technical aid, the teacher may readily discover whether any of his pupils are color-blind, by a proper use of color-charts or color-tablets. Every child that cannot select from among the tablets the exact color which is pointed out on the chart is, of course, more or less color-blind, and should have the benefit of frequent exercises with (1) the three primary colors, and (2) with their double and triple combinations. By using very strong and brilliant colors alternately with those complementary to them, this kind of defect in sight may be, in part at least, removed. (See COLOR.)

Teachers should not permit their pupils to stoop while engaged in reading, writing, or drawing; since this tends to injure the sight. It is also advisable to accustom the pupils to use their eyes at changing distances of the object, with an equal degree of perfection especially in reading, writing, and drawing. Then, if the eye be tired at a given angle of sight, it may continue its work, without injury or discomfort, at a smaller or larger angle, and thus be enabled to do more work without detriment to the sight. Many of the ordinary school arrangements are more or less injurious to the organ of sight. "Short-sightedness," says Liebreich (*School Life in its Influence on Sight*, London, 1872), "is developed almost exclusively during school life; rarely afterwards, and very rarely before that time. Is this coincidence of time accidental,—*i. e.*, does the short-sightedness arise at the period about which children go to school, or has school life caused the short-sightedness? Statistical inquiries prove the latter to be the case, and have shown, at the same time, that the percentage of short-sighted children is greater in schools where unfavorable optical conditions prevail." There are, according to this writer, three changes in the functions of the eye, which are immediately developed under the influence of school life: (1) Decrease of the range of vision—short-sightedness (*myopia*), (2) Decrease of the acuteness of vision (*amblyopia*), and (3) Decrease of the endurance of vision (*asthenopia*). These are chiefly caused by such arrangements as afford either insufficient light, or admit it in an improper manner. The following is an important practical direction in this respect: "The light must be sufficiently strong, and must fall on the table from the left-hand side, and, as far as possible, from above. The children ought to sit straight, and not have the book nearer to the eye than ten inches at the least. Besides this, the book ought to be raised 20° for writing, and about 40° for reading. — See FAHRNER, *The Child and the Desk*. (See HYGIENE, SCHOOL, and SENSES, EDUCATION OF.)

FACTORY SCHOOLS are, as the name indicates, elementary schools for the instruction of children employed in factories. They are established in the factory buildings, and generally supported by the owners of the factories. In proportion as legislators, in modern times, have become desirous to extend the benefit of education to all the children of the state, the schooling of factory children has attracted their attention; and the question, what can and should be done to secure to these children the benefits of education, now often engages the attention of the legislatures of civilized states. With the recent development of the factory system, the employment of children in factories has assumed large dimensions. They have been found to be useful helpmates in many mechanical processes, in some even indispensable; and they have been employed to a large extent in house industries, mining, pottery, agriculture, as well as in all kinds of factories; and nowhere more than in Great Britain, where formerly children, some as young as six years of age, were severely employed sometimes for 12, 14, 16, or 18 hours a day, or, by a relay system, during all the night, and frequently at very exhaustive work, under unwholesome conditions and in morally dangerous surroundings, while no time for school or home education was granted. The inhumanity and the dangerous effects of this practice began to be publicly discussed more than a century ago; but it led to no concerted action, until the abolition of the conspiracy laws against the coalition of laborers in England, in 1813. The first efforts to counteract these baneful influences were made by associations of English laborers, and by their repeated petitions to Parliament, which led (1819) to enactments regulating children's factory labor. These were, however, entirely disregarded, no agency being ordained for their enforcement, against the greed of profit on the part of employers, and the necessities of poor families. A constantly repeated agitation by the workmen brought about a parliamentary commission of inquiry and the enactment of the law of 1833. This related only to factories in a very narrow sense, confined the work-day within the hours of 6½ A.M. and 9½ P.M., and the working time of persons from 13 to 18 years of age to 12 hours, of children from 9 to 13 years of age to 8 hours, and allowed the employment of children of less than 9 years in exceptional cases only. The latter two classes of children were to be employed only under the condition that they could show by some certificate, that they had enjoyed or were enjoying school advantages amounting to 150 hours in the year. This latter clause was illusory, and could be easily circumvented like the rest of the law; yet it was stricken out in a new enactment (Sept. 10., 1844), which allowed only 10 hours as a work-day for children above 13, and from 6½ to 9 hours for those below 13 years of age. This law would again have remained a dead letter but for the appointment of factory inspectors, with very restricted powers, among whom was a man of extraordinary merit, Leonard Horner (1833—59), who, together with the trade unions and some few philanthropists, worked with untiring energy, to accumulate, in his reports to Parliament, a huge mass of evidence in relation to the abuses of the factory system, and especially its direful influences on women and children. Later legislation gradually extended the benefit of the factory laws to children employed in most kinds of industry, and slightly restricted their laboring time, chiefly by confining it within the hours of the day (Children's Employment Act of 1867); but the factory schools, being dependent on the school fees of parents, voluntary private donations, and denominational Sunday-schools, continued to be of the most inadequate character down to the new school act of 1870; and this still left much to be desired in respect to working children.

The legislation of all the other countries in which modern industry is largely developed, is, more or less, a copy of the English, with hardly a single feature of improvement upon the latter as regards the restriction of children's employment, and with the disadvantage that there is either no board of factory inspectors provided, or where there is, or was (in France it has been abolished), that the inspection is of no value. In Germany, Switzerland, and Belgium, however, a sufficient provision exists for schools which are accessible to, or even compulsory on, every factory child, thus affording a schooling facility which extends from the earliest childhood up to the adult age, or is about being so far extended. Prussia was the second state to regulate the hours of children's labor in factories, with the view to afford opportunity for school attendance. The laws of 1839, mere copies of the English act of 1833, were, in 1853, so far improved as to exclude from factories all children below 12 years of age, permitting those below 14 to work only 6 hours in each half day, under the condition of 3 hours' attendance at school. The law of the new German Empire (Nov. 10., 1871) is, in all essentials, the same. France followed Prussia with a law (March 22., 1841) which entirely excluded children below eight years and required all below 13 to prove some attendance at school; but the law, having no enforcing clauses, was altogether disregarded. The Austrian factory law approves of the labor of children above 10 years of age; and thence up to 14, it allows an ascending scale from six to 10 hours, and between 14 and 16 years, 12 hours; exceptionally, 14 hours. The legislature of the Netherlands adopted, in 1875, a law akin to the modern English law, but without any enforcing provisions. In Belgium, there were, according to the latest reports, 900 factory schools, comprising 158,060 children of all ages, and schools connected with every factory in which young children, to the number of 33,878, were instructed. The law regulates the attendance at school, but does not essentially restrict the maximum time of employment. An attempt, made in 1855, by the city council of Berlin to establish four factory schools, failed, as the school had to be discontinued after one year's existence. Belgium is the only country in which the state law has made provision for the establishment of factory schools. In Massachusetts (General Statutes, 1863, ch. 12), the law ordains: "No child under the age of 12 years shall be employed in any manufacturing establishment more than 10 hours in a day." The official labor statistics of that state show that the law is, almost everywhere, a dead letter. The law of New Jersey (March 11., 1855) says: "No children under 10 years shall be admitted in any factory, and no minor for more than 10 hours a day." The Revised Statutes of Rhode Island (1857, ch. 39) say: "No minor who has attained the age of 12 years and is under the age of 15 shall be employed more than 11 hours, nor before 5 A. M., nor after 7. 30 P.M." The enactments of other states are similar; but there is nowhere an efficient provision for the enforcement of the laws. The legislation of most other states only requires that factory children should attend school for a specified length of time. It is easy to see, and is generally admitted, that factory children are not so situated that they can avail themselves of the public schools. Their attendance at the day schools will always be irregular and of short duration. The larger children may, to some extent, enjoy the advantage of evening schools and Sunday-schools; but, as long as children are employed in factories, they will have to obtain their education in schools especially adapted to their wants. Many schools of this class have been established by the proprietors of large factories, of which the best known, in Europe, are those connected with the Krupp establishment in Essen, with that of Dolfuss in Mülhausen, Alsace, and that of Greg, Co. of Chester, England. The latter is a fair example of most of the schools. The proprietors of the factories assume the entire care of the children, chiefly orphans and poorhouse pupils, clothe, feed, and lodge them, and educate them in special schools.—See VON PLENER, *The English Factory Legislation*, English trans., with Introd. by A. J. Mundella (London); HUBER, *Reisebriefe aus England im Sommer* (1854).

FACULTY (Lat. *facultas*), a term originally applied to a body of men to whom any particular privilege or right is granted; hence, in a college or university, the *faculty* consists of those upon whom has been conferred the right of teaching as professors of specific subjects (*facultas profitendi et docendi.*) The faculties of a university are subordinate corporations, each consisting of a body of teachers, or professors, in some particular department of knowledge. At first the European university (that of Paris) comprised but two faculties,—that of arts (q. v.) and that of theology, to which, in the 13th century, those of canon and civil law and of medicine were added. The division into four faculties was transferred from the University of Paris to the German universities; the faculty of arts was afterwards named the philosophical faculty. Many changes have been introduced in this part of university organization since that time. In American universities and colleges, the faculty consists of the body of professors, with the president at its head, and has the power of conferring degrees.

FAGGING, a peculiar custom which has existed, from the earliest times, in the great public schools of England—Eton, Harrow, Rugby, etc., according to which boys of the lower forms (classes) perform certain personal services, for those of the higher. These services are either due to a particular student—the special master—or to the whole higher class. The former are such as carrying the master's messages, preparing his breakfast, waiting upon him at dinner, stoking his fire, etc.; and the general duties are to attend at the games, in cricket, for example, standing behind the wickets to catch the balls, and other such minor services. While many of these services appear to be of a menial character, they are not considered such, inasmuch as, without a fag, the boy would be obliged to perform them for himself. The system of fagging, like *pennalism*, in the German universities, has been the means of great abuse and tyranny exercised upon the younger students, yet it has strenuous defenders, as being, on the whole, beneficial. (See ENGLAND.)

FALK, Johann Daniel, a German educator and philanthropist, born in Dantzic, in 1770, and died in 1826. After studying at the university of Halle, he distinguished himself as the author of several satirical poems, and was introduced by Wieland into the literary circles of Weimar. He founded, in that city, a children's aid society and the first German house of refuge. He had great faith in the efficacy of music and labor as educational agencies, and was very anxious to foster in the minds of his pupils a spirit of cheerfulness. At the request of the Pedagogical Society of Leipsic, of which he was a member, he wrote an essay on common schools (*Ueber die Grenzen der Volks- und Gelehrtenschule*, 1821), which is still highly valued. In an appeal to the diet of Saxe-Weimar and the entire German people (*Aufruf zunächst an die Landstände des Grossherzogthums Weimar etc.*, 1819), he warned the German people against confounding popular education with popular instruction. His institution (*Falkisches Institut*) was carried on after his death by his widow, until 1829, when the state government took charge of it.—See A. WAGNER, *Falk's Liebe, Leben, und Leiden in Gott* (1818).

FALK, Paul Ludwig Adalbert, Prussian Secretary of State for the Department of Educational, Ecclesiastical, and Medical affairs, born Aug. 10., 1827, at Metschkau, Province of Silesia, Prussia, is the son of a Protestant clergyman. He received his first education at Schweidnitz and Landshut, attended the *Friedrich's*-

Gymnasium at Breslau, and, after graduation, studied for the legal profession at the university at the same city, also paying great attention to history and natural philosophy. He entered the Prussian state service in 1847, received the degree of LL. D., in the same year, and, after having abandoned his original intention of preparing himself for a professorship in laws, and passed through the intermediate stations of his career, he obtained, successively, the appointment of assistant state attorney at Breslau, and (1853) that of state attorney at Lyk. In 1858, he was elected to the Prussian Chamber of Deputies and acted as a member of the Committee on Petitions, Budget, and Military affairs during the legislative period of 1858—61. In 1861, he was appointed state attorney at the *Kammergericht* in Berlin, and, in the following year (1862), councilor of the court of appeals in Glogau, Silesia. During this time, he took part, with other eminent jurists in the edition of several standard works on law. Although not engaged in practical politics, which he studiously avoided in consideration of his judicial office, he was elected (1867) to represent the district of Glogau (Silesia) in the provisional Parliament of the North German Union, but peremptorily declined a reelection. In 1868, he was appointed privy councilor of justice (*Geheimer Justiz-Rath*) and *Referent* in the state ministry of justice, in which position he took a very important part in the new codification of laws for the North German Union, and, subsequently, for the German Empire. In 1871, King William appointed Falk one of the representatives of Prussia in the Federal Council (*Bundesrath*, or Upper House of the German Parliament), where he acted as chairman of the committee of justice, in which capacity he rendered very important services in the re-organization of the system of legal proceedings, adapted to the new order of things in Germany. In January, 1872, Von Mühler, the Secretary of State for Ecclesiastical, Educational, and Medical affairs, resigned his office, and Falk was appointed his successor by King William. From the very beginning of his administration, a fresh and energetic spirit seemed to be imparted to the management of this important branch of the state government. The new minister found himself the inheritor of all the difficulties which, at that time, beset his department, arising from the differences between the authority of the state and the church in regard to the supervision of the schools, public and private,—a conflict which had already strongly manifested itself during the administration of his predecessor in office. In February, 1872, Minister Falk introduced a law, which was passed March 11. of the same year, according to which the supervision of all schools was declared to be the exclusive prerogative of the state. This law was carried against the united efforts of the Catholic and Conservative Protestant parties of the Prussian parliament. It provided that the supervision of all educational institutions, public or private, in opposition to the laws of some of the provinces of the kingdom, should be the sole prerogative of the state; that all officials or corporations charged with such supervision should be considered as state commissioners; and, finally, that this law should not affect the co-operation in the supervision of such institutions, on the part of communities and their constitutional organs, as authorized by statute.

In a rescript, dated March 13., 1872, and published in the official *Centralblatt für die Unterrichtsverwaltung*, Falk explained the radical change which the new law effected in the relation of the public schools to the state churches. "Heretofore," the minister says, "the inspection of schools was immediately vested in the church officers,—the pastors of the united Evangelical Church and of the Roman Catholic Church, these being inspectors of schools, in virtue of their offices. By the operation of the new law, the right of inspecting schools belongs exclusively to the state; and all authorities and officers to whom this inspection is entrusted, act in the name of the state." The new law vacated nearly all the offices of school inspectors in towns and "circles" (subdivisions of provinces); but, to guard against interruption, all the incumbents were to continue provisionally the discharge of their former duties. The minister declared, however, that no person would be allowed to remain in this office, or would be appointed to it, who was not known to be faithfully devoted to the interests of the state. The inspectors in the Polish districts of the state were, moreover, expected to take special care that the teaching of the German language was not neglected. This law has since been gradually carried into practice, and the number of lay school inspectors who take the place of clergymen has steadily increased.

The Catholic bishops made a determined opposition to the new policy of the government. In a joint pastoral letter to the clergy, they instructed them not to lay down their offices as school inspectors without previously consulting the diocesan bishop; and, in a memorial addressed to the government, they solemnly declared that they regarded this law as an incroachment upon the inalienable, holy right of the Church as to the public schools, and that they expected from it disastrous consequences both to church and state. Falk, however, continued, by a number of measures, to assert the exclusive right of the state to legislate in all school affairs. A rescript of June 15., 1872, excluded members of ecclesiastical orders and congregations from holding positions in the public schools; a decree dated July 4., abolished the so-called Marianic congregations, and forbade the pupils of state institutions to participate in them.

In January, 1873, Minister Falk proposed and defended an act in relation to the scientific requirements exacted by the state for the admission of candidates to ministerial functions, requiring an examination of maturity from a gymnasium, an academic triennium, and a scientific state examination of candidates, with proper exemptions; also conferring upon the state the right of supervising Catholic seminaries, and of approving appointments to office by the bishops. The act was passed by both houses of the Prussian Parliament, and became a law by royal sanction, May 11., 1873. It is the first of the famous *May laws*. Other difficulties arose in the province of Posen, where a large proportion of the inhabitants are of Polish nationality and profess the Catholic religion. A decree of the state ministry prescribed that, in all higher educational institutions in which the German language was ordinarily used, religious instruction should likewise be imparted in German. Archbishop Ledochowski of Posen instructed his subordinates to disregard this decree, and to use the Polish language exclusively in religious instruction. The government, at first, did not proceed against the prelate directly, but suspended a number of Catholic clergymen and instructors who obeyed the archiepiscopal ordinance in preference to the ministerial decree. The persistent opposition of the archbishop led to further measures against him, and, ultimately, to his being sentenced to imprisonment for two years (Febr. 3., 1874). Before the year 1873 ended, the Prussian government found itself involved in similar proceedings against the other bishops of the kingdom, all of whom, without exception, refused obedience to the so-called May laws. These proceedings terminated in the same way; and the bishops who next followed the Archbishop of Posen into prison were the Bishop of Treves and the Archbishop of Cologne. Other severe measures followed, and the Archbishop of Posen was deposed (April 15., 1874). In May, 1874, the Prussian chambers passed a law regulating the administration of all Catholic bishoprics which may be vacated by incumbents through legal decisions. The contest between the state and church authorities is, however, not yet ended (1876).

While substituting for the former co-operation of state and church, in the inspection of the public schools, the sole right of the state, Falk also conceived the plan of a total re-organization of the school system. Twenty prominent men, representing all the different parties, were called to Berlin to discuss a draft which had been prepared by the minister. The conference lasted from June 11. to June 20., 1872; and, on the basis of its deliberations, the minister, Oct. 15., 1872, issued general regulations concerning the public schools and teachers' seminaries. These regulations were intended as a forerunner to a new school law; and they were regarded as modifying, in very many essential points, the principles on which the former school regulations of Prussia were based, and as requiring a return to the educational principles advocated and practiced by Pestalozzi.

FARMERS' COLLEGE, at College Hill, Hamilton Co., Ohio, near Cincinnati, was chartered in 1846. It is supported by the interest of a fund of about $67,000. The institution belongs to the contributors to its funds; each contributor to the amount of $100 receives a certificate entitling him perpetually to the education of a pupil free of charge for tuition. The holders of these certificates elect triennially 15 of their number directors to manage the college. The college has a preparatory and a collegiate department, the latter having a classical and a special course. Facilities are afforded for instruction in drawing and music. Both sexes are admitted. Libraries of over 2,000 volumes are connected with the institution. The cost of tuition is $10 per term of 20 weeks. In 1875—6, there were 8 instructors and 76 students (38 male and 38 female), of whom 24 were in the collegiate department. The presidents of the college have been as follows: Freeman G. Cary, 1847—53; Isaac I. Allen, 1853—6; Freeman G. Cary, *pro tem.*, 1856—7; the Rev. Dr. Charles N. Mattoon, 1857—60; Jacob Tuckerman, 1860—6; Charles Curtis, 1866—70; J. S. Lowe, the present incumbent (1876), elected in 1873. During 1870—73, rival boards of directors were at law, and the college was closed.

FEAR, a sense of danger, the apprehension of coming injury, or the anticipation of pain, is an emotion of the mind which the educator often finds it necessary to excite, in order to control the actions of his pupil, but which he should address with extreme care and only after other means of persuasion have failed. There are two kinds of government,—that of influence and that of force; and the former should always be preferred to the latter, because it addresses the inner nature and produces a permanent effect upon the character, while the latter can be only temporary. By the one, the will of a child is trained, and a self-controlling power is fixed in the mind; by the other the misdirected, perverted will is still left a prey to vicious propensities, the operation of which is checked only as long as the external restraint continues. Some dispositions, however, need to be restrained by a sense of fear before other influences can be brought to bear upon them. Many children are inconsiderate, rash, and impulsive, and accordingly yield at once to their propensities. Physical punishment seems to be needed in order to produce any conscientious observation of their own conduct; but, without great care on the part of the educator, in inflicting pain for this purpose, much injury may be done to the child. Unless the educator's personality in this infliction can be subordinated, in the child's mind, to the sense of deserved punishment for wrongdoing, he will antagonize the child, and destroy all means of controlling him by personal influence. "The moment a child's mind is strongly affected by fear," says Horace Mann, "it flies instinctively away, and hides itself in the deepest recesses it can find,—often in the recesses of disingenuousness and perfidy and falsehood. Instead of exhibiting to you his whole consciousness, he conceals from you as much of it as he can; or he deceptively presents to you some counterfeit of it, instead of the genuine. No frighted water-fowl whose plumage the bullet of the sportsman has just grazed, dives quicker beneath the surface than a child's spirit darts from your eye when you have filled it with the sentiment of fear." This is especially true of certain dispositions; and, hence, this appeal to fear should not be made without very careful discrimination. Hecker, in the *Scientific Basis of Education* (N. Y., 1868), says, "If *cautiousness* is too large, seek to influence the child through his affections. Fear will paralyze such a mind. To make this faculty useful where it is predominant, the teacher must get the affections of the child, and he can then, by proper direction, make fear an intelligent restraint." Formerly, the idea of school government was identical with that of absolute tyranny,—arbitrary power in the teacher, and unthinking obedience in the pupil, enforced by the greatest severity of punishment. Dr. Johnson, in the defense of the school-master Hastie, said, "Children being not reasonable, can be governed only by fear;" but educators do not find all children without reason and conscience, and, therefore, the proposition was too sweeping. When Boswell repeated to Johnson the following sentence of a speech of Lord Mansfield: "My Lords, severity is not the way to govern either boys or men," he replied, "Nay, it is the way to *govern* them. I know not whether it be the way to *mend* them." But no school government can be approved that is not intended to amend as well as to control. Children should be made to fear to do wrong; and this should be brought about as much as possible by what Herbert Spencer calls the *method of nature*, that is, by making punishment the necessary consequence of the wrongful act, on the principle involved in the maxim, "The burnt child dreads the fire." This eliminates the personal element in the fear implanted in the mind of the child. He does not fear the teacher, but he fears to offend,—to do wrong. The same consideration excludes from discipline, all threatening, scolding, and harsh words, for the purpose of engendering fear, and, especially excludes anger in punishment. The fear to be excited in the mind of the child should not be an apprehension of personal safety, leading to meanness, cunning, and deception as a means of self-protection, but should be akin to that feeling which Solomon referred to when he said, "The fear of the Lord is the beginning of wisdom." This is not inconsistent with a constant appeal to the higher motives and finer feelings of human nature, but may be made a means of their development, which is the true end of all moral education.

FELBIGER, Johann Ignaz von, one of the foremost reformers of the public-school system of Austria, was born in 1724, at Grossglogau in Silesia, and died at Presburg, Hungary, in 1788. After studying Catholic theology, he entered the order of St. Augustine, and, in 1758, became abbot of the house of his order in Sagan, Silesia. In this position, it was his duty to superintend the churches and schools of Sagan and some of the neighboring villages. The wretched condition in which he found the schools, induced him to visit Berlin secretly, in order to acquaint himself with the new real school of that city and the tabular and literal method of Hähn (q. v.). As the result of this visit was entirely satisfactory to him, he not only repeated it several times, but sent a number of young men there to be educated as school-masters. After the end of the Seven Years' war, he displayed great activity in founding new schools, some of which were organized as model schools; he also drew up several courses of instruction, and prepared a number of school books, which were printed at his own printing establishment, and obtained a very large circulation. Hähn's method became, through his efforts, predominant in all Silesia, and was often called after him Felbiger's or the Sagan method. In 1774, he was appointed by the Empress Maria Theresa chief director (*Oberdirector*) of the German schools; and, Dec. 6., 1774, the empress sanctioned the general regulation for the German model, head, and trivial schools which had been drawn up by Felbiger. This regulation marks the beginning of a new period in the history of Austrian schools. It begins with the following significant sentence: "The education of youth of both sexes is the most important basis of the true happiness of nations." Though it did not make education compulsory, it expressed the expectation that all children of both sexes who did not receive private instruction, would attend the German school for six or seven years, beginning with the sixth year of age. Public education was treated as a state affair; the methods of instruction and discipline and the course of instruction were regulated, a proper classification introduced, and provision made for the erection of school-houses, for cheap and good school-books, and for the better education and compensation of teachers. In regard to salaries, the provisions were, however, far from being satisfactory, as may be inferred from the fact that the regulation expressly allows teachers to work in their leisure hours as book-binders, joiners, shoe-makers, tailors, and weavers. They were, however, absolutely forbidden to keep taverns. In order to elevate the school-teachers to a higher social position, the regulation assigned to them a comparatively high rank among public functionaries. As regards the different classes of the common schools, each town, market-town, and parish was to receive a trivial school, which had only one teacher, and imparted instruction in reading, writing, arithmetic, and the elements of agriculture. In each circle, at least one head school (*Hauptschule*) was to be established, which should have three classes, three teachers, and a director, and teach, besides the subjects of the trivial school, German composition, drawing, surveying, history, and geography (especially of the native country), and also the elements of the Latin language. Wherever circumstances would allow it, female schools were established, besides the head schools for boys. Every province was to have at least one normal school, which was to combine the character of a model school and of a teachers' seminary. The course of instruction embraced all the subjects of the head school, and, besides, natural science and physics, Latin, the history of arts and trades, architecture, and mechanics. The establishment of a German school book publishing office, in connection with the Vienna Normal School, gave a powerful impulse to educational literature. The empress, in 1777, induced Felbiger to relinquish altogether his citizenship in Prussia, and, at the same time, appointed him provost at Presburg. Soon after this, the death of the empress put an end to his educational labors. The plan of military schools, which he had drawn up, was rejected by Joseph II., and he was removed from the chief direction of the Vienna Normal School. He was directed to remain at Presburg, and labor for the improvement of public instruction in Hungary. He was, however, unable to accomplish much, and died almost forgotten. Felbiger wrote a number of school books, and a manual explaining his method of instruction to teachers (*Eigenschaften, Wissenschaften, und Bezeigen rechtschaffener Schulleute*). The best biography of Felbiger is found in Helfert, *Die östreichische Volksschule*, vol. I.

FELLENBERG, Philipp Emanuel von, a Swiss educator and philanthropist, was born in Bern, June 27., 1771, and died there, Nov. 21., 1844. His father being a friend of Pestalozzi, he early conceived the idea that society can be protected against revolution only by an improved system of education. He believed that he had discovered the basis of a radical reform in the connection of education with agriculture. He bought, in 1799, a large estate near Bern, the Wylhof, called by him Hofwyl, and there founded, in 1804, his first school, for the purpose of educating poor boys, and even convicts, as agriculturists. Fellenberg endeavored to make this school self-supporting, and to cause instruction to be regarded by the pupils as a recreation. His institution proved a great success. All the visitors were struck with the cheerfulness and the eagerness to learn which were shown by the pupils generally; and a number of the pupils subsequently distinguished themselves as educators and teachers. Fellenberg also believed that his institutions fully supported themselves by the labor of the pupils; although, as liberal contributions were received all the time from friends of education, this has been doubted by many. Twice (in 1804 and 1817), Pestalozzi was, for a short time, connected with the institutions of Fellenberg, but they found it impossible to agree. Fellenberg, being descended from a noble family and having himself filled high positions in the state, was accustomed to rule and had dictatorial manners; while Pestalozzi, who as a practical educator was greatly his superior, was unwilling to act as a subordinate to him in educational matters. The fame of the school of Hofwyl was, to a large extent, due to Wehrli (q. v.), who became connected with it, in 1810. In the mean time, several new institutions for poor children had been established by Fellenberg. In 1807, he opened, in buildings which the government of Bern had presented to him, a special school of agriculture, with which, in 1808, a *philanthropin* for children of wealthy parents was connected. This school, in 1825, had eighty pupils, taught by twenty-two teachers. Among those who successively taught in the institutions of Fellenberg, were some of the foremost educators of Germany, as Herbart (q. v.) An institution for females, which was subsequently added, under the management of the wife and daughters of Fellenberg, was, like the original school of Hofwyl, chiefly intended for the poor. In 1830, a real school, designed for the education of the children of the middle classes, was established, and still later an infant school. As the education of teachers had been sadly neglected in the canton of Bern, Fellenberg, with the approval of the government, called forty teachers to Hofwyl for a three months' normal course. The next year, the government denied its consent, as it feared that Fellenberg would obtain, in this way, too great an influence in the affairs of the canton. In 1833, the government again arranged for holding a teachers' institute in Hofwyl; but, as the arrangements were not entirely satisfactory to Fellenberg, he opened another normal course for one hundred teachers at his own expense. The institutions of Fellenberg were celebrated throughout Europe, and were even visited by some of the reigning princes. A number of other institutions were founded after their model. After Fellenberg's death, the institutions were for a time continued by his son, Wilhelm von Fellenberg, but were afterward abandoned. In his religious views, Fellenberg shared the rationalistic principles which at that time were predominant in Germany and Switzerland; but, unlike most of the Philanthropists, he attributed great importance to the religious element of instruction, and devotional exercises were strictly and solemnly observed in all his institutions.—See W. Hamm, *Fellenberg's Leben und Wirken* (Bern, 1845); *American Annals of Education*, vol. I. (1831). An interesting account of the school of Hofwyl may also be found in the autobiography of one of its American pupils, Robert Dale Owen (*Threading My Way*, N. Y., 1874). (See also Hofwyl.)

FEMALE EDUCATION. This subject will be treated in two sections: (I) The history of female education, and (II) the discussion of its principles, or theory.

I. *History.*—The history of education in the ancient world almost exclusively refers to the education of the male sex. In the ancient monarchies of Asia and Africa, no provision was made for the instruction of girls in educational institutions. In *China*, the daughter, after the 10th year of age, was confined to the house. There she was taught to behave modestly and politely, to listen and to obey. She had to sew and to weave in hemp and silk, and to learn how to prepare the meals. At the age of fifteen, when she was betrothed, she received the ornament of the head-needle; and, at the age of twenty, she was married. In education, as well as in all other departments of life, China has remained stationary; and the education of girls is now substantially the same as it was thousands of years ago. While the instruction of boys is quite general, nine-tenths of all the women can neither read nor write; and it is only the daughters of the wealthiest families that receive even a meager education. In *India*, the instruction of the female sex was also totally neglected. An exception was made only in the case of public dancers, or bayaderes. The latter are daughters of poor parents, and, in childhood, are kept for the service of the temple. The priests teach them to read and write, and have them carefully taught music, dancing, singing, and all the ways of female coquetry. In *Persia*, which had a system of national schools, the girls were generally excluded from public instruction. Still there seem to have been exceptions; for the plot of a Persian novel is based upon the love of two persons, which is represented as beginning at school. In *Egypt*, the female sex occupied a more dignified and independent position than in the other oriental nations, attending to the business of the market and to commerce; but no provision was made for their instruction. Cleopatra is, however, reported to have been one of the most accomplished women of antiquity, and to have spoken Hebrew, Arabic, Ethiopic, Syriac, and other languages. The legislation of *Sparta* excelled, in this respect, not only every oriental country, but also every other Hellenic state. The Spartans held a very high opinion of the dignity of the family, and the wife and mother was the center of family life. The wife was held in especially high esteem; she was called *δέσποινα, mistress*, and exerted a considerable influence over her husband. This social position of woman required that her education should be similar to that of the other sex. The Spartans thought that free, noble men could only spring from noble, well-formed, healthy mothers; and the girls, therefore, participated, though with some modifications, in the peculiarities of Spartan education. They were to be inspired with feelings of morality and patriotism no less than men. The society of experienced matrons was one of the chief means of their education; and exercises in singing, the study of the poets, and the learning of choruses were used to promote their general culture. They practiced gymnastic exercises, on arenas specially provided for them, and graceful mimetic dances. At certain festivals, they sang and danced in public. Young men were usually present at these exhibitions; and females attended those given by the males. Thus a rivalry arose between the two sexes, which had a beneficent influence upon the education of both. As the result of this education, the young women of Sparta manifested a bodily vigor and beauty, and a national pride, which were admired by all foreigners. The school of Pythagoras which, like the Spartans, represents the peculiar development of the Doric tribes, produced several female writers on education (Theano, Phintys, Periktione), whose writings are by far the best that can be found on the subject in the literature of the ancient world. The Dorians regarded piety as the basis of self-control, and music and gymnastics as means for attaining it. This and a due harmony between the intellect and the will were viewed by them as the chief results of all sound female education. In *Athens*, female education was not so well provided for as in Sparta, and the elevated position which the Spartans conceded to their wives was derided by the Athenians as *gynocracy*, or female government. With them, the wife was not the *δέσποινα*, or mistress, but, in fact, the servant of the house. Only in exceptional cases, did the daughters of a family receive instruction extending beyond the usual domestic duties; female schools were unknown. Women appeared in public only at public festivals, and it was only the educated *hetæra* that the intelligent Athenian could meet in society. The *Romans* had a very exalted idea of the dignity of family life and the position of woman. In no nation of antiquity was monogamy so strictly observed as in Rome. The kings, according to popular tradition, and afterward the decemvirs, were expelled from power on account of attacks made upon female virtue. The mother of the family (*mater familias*) presided over domestic affairs as a venerable priestess, and regarded the education of all her children, boys as well as girls, as her most sacred and most important duty. Thus the girls received an excellent home education; and it would seem that they also attended schools, for we read that Virginia was seized by order of the decemvir Appius Claudius as she was going to school. The influence of *Christianity* upon female education shows itself, for several centuries, only in the regeneration of family life. The first places in Christian countries in which instruction was provided for girls, outside of their families, were the convents. The nuns, as we see from the correspondence of Boniface, not only copied the Biblical books, but also taught secular sciences. The number of girls who were educated in these schools was, however, small in comparison with that of boys. The daughters and sisters of Charlemagne, as appears from their correspondence with Alcuin, took an active part in the learned studies which distinguished the court of that great emperor; and their example was subsequently followed by several other princesses and nuns; still no steps were taken toward a general provision for female instruction, during the first part of the middle ages. The development of knighthood organized a system of instruction for a small but very influential portion of female youths,—the daughters of the nobility. No special institutions were founded for them; but it was common to have a number of them brought up together in the castle of a count or other nobleman. The pupils, in this case, inhabited in common a separate part of the building, were placed under a common governess, and received instruction from a priest, sometimes also from traveling artists, singers, and poets. Reading and writing were the principal part of this instruction, and the young ladies were called upon, in the long winter evenings, to read to the family or to a select company new songs, legends, and stories. Sometimes they also acquired a knowledge of foreign languages, especially of French and Latin. They were also instructed in singing, and playing upon musical instruments. When the towns grew strong, in their struggles against kings and nobles, important progress was made by the establishment of female schools. In Brussels, we find, at the beginning of the fourteenth century, a school for small girls, with four female teachers; and boys and girls who were brothers and sisters, were often allowed to attend the same school. Similar schools were found in some of the other cities, but only in a limited number. In the convents, only those girls received instruction in reading and writing who intended to enter the order. In some of the towns, the girls were allowed to attend boys' schools. The great impulse which was given to the extension of female schools by the *Reformation*, in the 16th century, is generally recognized, even by Catholic writers. Luther, in his appeal to the magistrates of the German towns, urged them to establish schools, not for boys only, but also for girls. All the church and school regulations which were issued during this period recognized the need of establishing female schools. The chief reason adduced for the demand was the duty of women as well as of men to read the Scriptures. The greatest zeal for the establishment of female schools was displayed by Bugenhagen (q. v.), who demanded these schools not only for the towns but also for villages. The course of instruction embraced reading, writing, arithmetic, catechism, Bible history, and singing. Although the ideas of the reformers were not carried out to their full extent, the number of schools for the instruction of girls, established at the time of the Reformation, was very large. They were partly parish schools which were attended by both boys and girls, and partly schools for girls exclusively, which aimed to impart a higher education than could be found in the parish schools. Little progress was, however, made in the second half of the 16th and in the 17th century; and, after the devastations of the Thirty Years' War, female schools were, in Germany and other countries of the European continent, in a less flourishing condition than at the time of the Reformation. The work was resumed in the 18th century; but, at first, with only slow progress. Gradually, however, the adoption of the principle of compulsory education (q. v.) prepared the way for the universal education of female youth in public elementary schools. In some of those countries of Europe where the principle of compulsory education has not yet been adopted or carried out, a large portion of the female youth still grow up without any instruction. Among the most backward countries in this respect, is Russia. While, in 1874, the number of boys attending school in proportion to the entire school population varied in the nine school-districts into which the empire is divided from 1:1.5 (in Dorpat) to 1:10.5 (in Moscow); the proportion of girls attending school was as follows: Dorpat, 1:2.4; Warsaw, 1:6; St. Petersburg, 1:19; Odessa, 1:23; Wilna, 1:51; Kharkof, 1:51; Kasan, 1:33; Kief, 1:65.8; Moscow, 1:49.4. Among the seventeen provinces into which Austria proper is divided, there were, in 1874, four (Lower Austria, Upper Austria, Salzburg, and Vorarlberg) in which the number of girls attending the public schools exceeded that of boys, seven in which the number of girls was a little inferior to that of boys, and six in which it fell considerably below that of boys; namely, Triest, boys 6,188, girls 4,372; Goritz and Gradisca, boys 8,183, girls 6,441; Istria, boys 7,961, girls, 4,146; Galicia, boys, 93,756, girls, 60,193; Bukovina, boys, 6,858, girls, 2,957; Dalmatia, boys, 8,436, girls, 1,898. Other statistics of this class may be found in the articles on the several countries of Europe.

The need of schools providing a higher than elementary education for girls was very generally and deeply felt, especially when England, France, and Germany entered successively into the golden age of their national literature. An excellent institution of the kind was founded by A. H. Francke (q. v.), but there was a great diversity of opinion in regard to the course of instruction to be prescribed for the higher education of females. The large majority of the schools of this class have ever since been private institutions; but, in Germany and several other European countries, the state governments as well as the municipal authorities have, in the nineteenth century, begun to establish female schools of a higher grade. In England, the education of the daughters of wealthy parents at home by governesses is more general than in any other country of the Christian world; but, recently, considerable progress has been made in the establishment of female schools of a higher grade. (See ENGLAND.)—In Catholic countries, a very great majority of the female schools of a higher than elementary grade have been under the control of female religious orders. The number of these schools has largely increased since the beginning of the 16th century. When the Cardinal Archbishop, Carlo Borromeo, of Milan, died, in 1584, there were, in his diocese alone, 600 Ursuline nuns, in 11 houses, who devoted themselves to the instruction of girls. During the last three centuries, a number of new religious orders have been formed for the purpose of affording girls a higher education. There are, at present, more than 30 orders of this class, with several thousand members; and their schools are not only attended by Catholic, but also by large numbers of Protestant girls. (See ROMAN CATHOLICS.) For statistics relating to female schools in Europe, see the articles on the several countries.—The U. S. Commissioner of Education, in his report for 1874, enumerates 214 institutions for the superior instruction of women, of which 114 were authorized by law to confer degrees. These are in part styled *colleges*, and in part *seminaries*, *institutes*, etc. The oldest of these institutions is the Bradford Academy, at Bradford, Mass., chartered in 1804; the oldest having the title of *College* are the Maine Wesleyan Seminary and Female College, at Kent's Hill, Me., and the Granville Female College, at Granville, Ohio, chartered in 1821 and 1834, respectively. The progress of the higher education of women is illustrated by the following facts: in 1870, the number of these institutions in the United States reporting to the Bureau of Education was 33, the number of instructors 378, and the number of students 5,337; while, in 1874, the number of institutions is reported at 209; the number of instructors, 2,285, and the number of students, 23,445. These institutions commonly comprise a primary, a preparatory, and a collegiate department. The last extends through a course of three or four years, and embraces the higher English branches, with the addition generally of Latin and French, frequently of German, and sometimes of Greek, Spanish, and Italian. Facilities are afforded, in most if not in all cases, for instruction in vocal and instrumental music, drawing and painting, etc. The principal degrees conferred by female colleges are Graduate in Arts (A. B.), Graduate in Science (B. Sc.), Sister of Arts (A. S.), Mistress of Liberal Arts (M. L. A.), Mistress of Liberal Learning (M. L. L.), Mistress of Science (M. Sc.), Mistress of English Literature (M. E. L.), and Mistress of Music (Mis. Mus.). In some of the higher co-educative institutions, there is a separate course for females (*Ladies' Course*) similar to that of most female colleges; in others, there is no distinction, females being admitted to the same classes, and on the same terms, as males. Among higher institutions for females exclusively, Vassar College (q. v.), at Poughkeepsie, N. Y., Smith College, at Northampton, Mass. (organized in 1875), and Wellesley College, at Wellesley, Mass. (organized in 1875), hold a high rank.

II. *Theory of Female Education.*—This is a subject which, especially in recent years, has very greatly engaged the attention of practical educators, scientific educationists, physicians, and all others who have either written or spoken on questions concerning the present condition and future prospects of human society and human welfare. The proper education of woman has been recognized as an important, perhaps the chief, factor of social progress. In former times, both ancient and modern, as we have seen, woman in general, occupied a secluded state; and it was only in the extreme privacy of the home circle that she exerted the potent influence inseparable from her sex, whether as daughter, wife, or mother. The Roman matron, within this narrow limit, was an educator of her daughters always, and sometimes chiefly of her sons, as in the case of Cornelia, only illustrious as the "mother of the Gracchi." Ancient history affords many examples of women who, breaking through the barriers of social custom, became illustrious for their learning and eloquence. Such were Aspasia of Athens, and Hypatia of Alexandria. The career of such women illustrated the intellectual capacity of their sex under circumstances permitting or encouraging its culture. Female education, however, has always been viewed as radically distinct from that of males,—as presenting entirely different aims, and requiring different processes of training and instruction, and a widely different curriculum of study. Much has been said and done in recent years to modify very greatly this view; but it is still generally entertained, and is, at the present time, the principle on which most schemes for the education of females are based. "A system of education," says Maudsley, "adapted to women should have regard to the peculiarities of their constitution, to the special function in life for which they are destined, and to the range and kind of practical activity, mental and bodily, to which they would seem foreshadowed by their sexual organization of body and mind." "From the beginning of the eighth year," says Schwarz, "the two sexes require, in almost every respect, a different education." "The culture of girls," says Von Raumer, commonly requires a process of instruction entirely different from that of boys." Alonzo Potter, in the *School and the Schoolmaster* (N. Y., 1842), emphasizes this principle: "One cannot look at the female—with less muscular vigor and more nervous sensibility than the other sex; with more timidity and gentleness; with deeper affections and more acute sensitiveness—without perceiving, that she has been appointed to a sphere very different from that of man. Her appropriate empire is over the family, where she not only lays the foundation, during childhood, of individual character, but where she ever exerts, through her acquaintance, and especially through her husband and children, a humanizing influence over the world." "Hence," he argues, "there should be, in the education of females, a special reference to their sex and condition of life." "The best educational training for a boy," says Dr. Clarke, in *Sex in Education* (Boston, 1873), "is not the best for a girl, nor that for a girl best for a boy." Such are the views upon which the education of females has been based. Arranged, as it has been by the other sex, the only considerations that have dictated its methods and processes have been the average physical weakness of women as compared with men, and the accomplishments they might need as wives and matrons. It is not difficult to perceive that were the education of men arranged by the other sex from an analogous stand-point, it would also be narrowed in its scope and processes. During the last few years, the questions pertaining to female education have been vigorously discussed by writers of both sexes; and much experience has been gathered, which appears to show that the necessity for a modified system of education for females is by no means so great as has been supposed and asserted. (See Co-Education of the Sexes.) We say modified *system* of education, because just as it is necessary to adapt the educational processes to individual traits, so is it equally necessary, upon the same principle, to adjust the training and teaching processes to male and female, as far as they severally present peculiar characteristics. In home education, these proper discriminations must naturally be made. The girl is treated as a girl, and the boy as a boy—in manners, habits, amusements, and accomplishments. Over the former the mother exercises a peculiar care. The need of this all educators recognize. "Girls," says Schwarz, "require chiefly the guidance of the maternal hand, in order that their tender nature may not be rudely handled, their purity not invaded, and the appropriately female direction of their development not interfered with. Their understanding and their feelings should be exposed to no rude touch, that, like the rosebud, they may develop themselves purely from within, and like the chaste mimosa, shrink from even the least contact." Such accomplishments are taught as are properly feminine; such as sewing, embroidery, the methods of household management, which every woman should understand, to which may be added music and dancing. In every thing thus taught, the future destiny of the girl, as a member of society, should be kept in view; not, as has been usually advocated, that her education is to be exclusively such as will fit her to perform the duties of wife and mother, but such as will enable her to live independently of these relations, should such be her destiny. "As the general rule," says Miss C. E. Beecher, "every true woman would prefer to be a wife, mother, and housekeeper, could her ideal be fully met. But in multitudes of cases this can never be, and so every woman should prepare herself not only for the ordinary duties of the family state, but also for some profession to secure an independent livelihood."

In public elementary instruction, as shown in the article on *Co-Education of the Sexes* (q. v.), girls and boys are frequently instructed not only in the same schools, but in the same classes. There are, however, numerous private female seminaries, many of which are boarding-schools. In such institutions, the discipline, instruction, and studies are all specially adapted to impart that culture and confer those accomplishments which are deemed to be proper for the female sex. The benefits of this one-sided training have been much called in question; many contending that the sexes should never be entirely separated in education. In this connection Mrs. Willard, an experienced educator of females, says: "Feminine delicacy requires that girls should be educated chiefly by their own sex. This is apparent from considerations that regard their health and conveniences, the propriety of their dress and manners, and their domestic accomplishments." In her *Address to the Public* (1819) in relation to female education, she discussed very ably and fully its defects, and thus enumerated in particular those of boarding-schools for girls: (1) A want of suitable accommodations, as well as of necessary apparatus for instruction; (2) Incompetency of instructors, those who keep these schools being unable, and sometimes unwilling to pay for properly trained and cultured teachers; (3) Imperfection of organization; (4) Tendency to teach showy accomplishments rather than such as are solid and useful, the immediate and sole object being profit, and hence a wish to gratify the caprices and vanity of ill-judging parents. Female seminaries of all kinds have especially been subject to the latter reproach; but the circumstances that have given occasion to it were due, in great part, to the false system of female education so long prevalent. Hannah More, in this connection, remarked: "Not a few of the evils of the present day arise from a new and perverted application of terms; among these, perhaps, there is not one more abused, misunderstood, or misapplied, than the term *accomplishments*. This word, in its original meaning, signifies *completeness, perfection;* but I may safely appeal to the observation of mankind, whether they do not meet with swarms of youthful females, issuing from our boarding-schools, as well as emerging from the more private scenes of domestic education, who are introduced into the world under the broad and universal title of accomplished young ladies, of all of whom it cannot very truly and correctly be pronounced, that they illustrate the definition by a completeness which leaves nothing to be added, and a perfection which leaves nothing to be desired." But at the period in which this was written, women of scholastic or professional attainments or literary ability were quite exceptional. Once, the chief social employment of young ladies was a kind of fancy embroidery or needle-work, which consumed, or wasted, a vast amount of time. Of this, Miss Edgeworth, in *Practical Education*, says, "Our great-grandmothers distinguished themselves by truly substantial tent-work chairs and carpets, by needle-work pictures of Solomon and the queen of Sheba. These were admirable in their day, but their day is over; and these useful, ingenious, and laborious specimens of female talents are consigned to the garret, or produced but as curiosities to excite wonder at the strange patience and miserable destiny of former generations." As late as 1873, Rev. S. Van Bokkelen remarked, "I think we may venture the opinion that all over the United States the academic education of young women is multifarious and desultory. It is comprehensive, embracing a little of every thing, but accurate in almost nothing. This is because it has no well-defined purpose. When our young women, instead of closing their books at 17, aim to prepare themselves for a college course, their shams will give place to realities, and the public exercises of our own best seminaries for girls will present a more substantial programme than music and sentimental essays, and have a higher purpose than to display the skill of the mantua-makers." (*The Education of Women*, a paper read before the N. Y. State Teachers' Association, July, 1873.)

The subject of the higher education of women has been chiefly discussed with reference to the question of their physical ability to undergo the continuous labor required to pursue a full college or university course of study. (See Co-Education of the Sexes.) The objections on this account, it may probably be said, have all been answered either by actual experience, or by the cogent reasoning of such writers as Anna C. Brackett

(*Education of American Girls*), Caroline H. Dall (*The Other Side*), Mary P. Jacobi, M. D. (*Mental Action and Physical Health*), Mrs. E. B. Duffey (*No Sex in Education*), and many others. The ability of young women to compete with the other sex, as university students, and without physical injury, appears to be pretty fully established; and, hence, the doors of universities and other higher institutions of learning are gradually being thrown open to women. This has been done only after the most strenuous opposition, and by stemming the adverse current of public opinion. In 1862, Mr. Grote strongly advocated that the University of London should admit women to degrees. "In refusing degrees," he argued, "the Senate was called upon to say, 'We consider our studies laudable and deserving encouragement only for men; they are not laudable, and we intend to discountenance them for women. We cannot grant academical honors and advantages which will tend to encourage what is a bad and wrong type of education for women.' I maintain this is an answer which the Senate is not warranted in returning. This would be to usurp the right of determining by authority a point which individuals have a full discretion to determine by themselves. I contend that every woman has a right to choose for herself among the various types of education; if among these she prefers that which coincides with our curriculum, we ought to be the last to discredit her for so doing." The Senate of the university, however, positively refused to grant degrees to women, on the ground that the strain necessary for passing the examination would be injurious to their health. To encourage women to compete for degrees, it was stated, is to invite them to self-destruction. Actual experience in the United States disproves the latter assertion. (See Co-Education of the Sexes.) In that country about fifty institutions for superior instruction are open to both sexes, besides which there is a large number for females exclusively.

The progress already made in the complete education of women, as well as that which is promised in the future by the continued operation of the same causes that have worked so great a change in the past, cannot but redound to the benefit of our race, and shed a genial influence on modern civilization. "Already," says Van Bokkelen, "an impulse has been given to society by the education of women; yet no truly womanly duty has been neglected, nor are women less disposed to accept the cares of domestic life, or yield to the claims of conjugal or maternal affection." "Will woman's smiles," he asks, "cease to be attractive when they are brightened by intelligence? Will her conversation lose its power when strengthened by words of wisdom? Will her beauty of form and feature vanish amid geometrical and metaphysical problems? Will her kingdom be circumscribed as her knowledge is enlarged? Will her companionship be less valued as her ability to counsel wisely and control judiciously is increased?" "Girls too," said Erasmus, "ought to receive a liberal education. The multitude hold it to be folly, but wise men know that nothing is more advantageous to the morals of women than extended knowledge." "Educate all the men of a generation," says G. B. Emerson, "and leave the women uneducated, and every child under their influence begins his public education with all the disadvantages of his father. Educate all the females, and you will give a permanent impulse to the onward movement of the race, which it can never lose. Each individual begins his progress from a higher level, and, with equal exertion, will bequeath a richer inheritance of knowledge and wisdom to his successors."—See Fénelon, *Traité de l'éducation des filles* (1687); Beaudoux, *La Science Maternelle* (Paris, 1844); Schwarz, *Erziehungslehre* (Leipsic, 1829); H. More, *Strictures on the Modern System of Female Education* (1799); Edgeworth, *Practical Education* (London, 1798), and *Letters on Female Education* (London, 1832); H. I. Schmidt, *History of Education*, part II. (N. Y., 1842); Geo. B. Emerson, *On the Education of Females*, a lecture delivered before the American Institute of Instruction, August, 1831; Emma Willard, *An Address to the Public, proposing a Plan for improving Female Education* (1819), reprinted in *Proceedings of N. Y. University Convocation* (1870); Emily Davies, *Higher Education of Women* (London, 1867); Barnard, *Studies and Conduct*, s. v. *Education of Girls* (Hartford, 1873); E. D. Mansfield, *American Education* (N. Y., 1851); C. E. Beecher, *Educational Reminiscences* (N.Y., 1874); Orton, *Liberal Education of Women* (N.Y., 1874); Markby, *Practical Essays on Education*, s. v. *The Education of Women* (London, 1868); Brackett, *The Education of American Girls* (N. Y., 1874). Beale, *University Examinations for Women*, a paper read before the Social Science Association (London, 1875); *Report of the U. S. Commissioner of Education for* 1874.

FEMALE TEACHERS. As long as female education continued to be neglected, the work of instructing pupils in schools devolved upon the other sex; but inasmuch as girls were taught only in the household, these schools were composed exclusively of boys. A woman capable of teaching was an intellectual and social phenomenon; for the position of females rendered the acquisition of learning unnecessary. A writer of the 13th century enumerated, as the end and aim of female education, "the knowing how to pray to God, to love man, and to knit and sew." In proportion, however, as women were set free from the social bonds that prevented their receiving the due culture of their faculties, it was perceived that they were well fitted to take a due share in the work of elementary education. In the United States, the number of female teachers by far exceeds that of male teachers. According to the census of 1870, out of 169,577 teachers, 126,822, or about 74 per cent, were females. In the New England states the excess of female teachers over males is very great. Thus, in Massachusetts, during 1874—5, the number of female teachers employed in the public schools was 8,047 out of an aggregate of 9,216, or nearly 88 per cent; in Maine, the proportion, in summer, is about 97 per cent, in winter, only 55 per cent; in Connecticut, the proportion is nearly as great; in Vermont, in 1873, out of 4,406 teachers, 3,739, or nearly 90 per cent, were females. In the state of New York, about 67 per cent of all the teachers employed are females; in the city of New York, out of 3,140 teachers employed in the public schools, in 1875, 2,842, or more than 90 per cent were females. In the other large cities of the Union, the preponderance of female over male teachers is very great. In the city of Boston, for example, out of 1,289 teachers employed in 1874, 1,091, or about 85 per cent, were females. In most of the western states, there is a smaller percentage of female teachers. Thus, in Ohio, in 1873, the number of female teachers was 12,110 out of 21,899; in Missouri, Kentucky, Tennessee, and Kansas, the number of male teachers is in excess of that of female teachers. In some of the European countries, the number of female teachers shows a similar preponderance; but, as a rule, the male teachers are in a majority. Especially is this the case in most of the German states. Thus in the public elementary schools of Prussia, there were, in 1857, 31,467 male and only 1,523 female teachers.

The reasons given for employing a large number of female teachers are chiefly the following: (1) The peculiar fitness of women for the work of instructing children; (2) The limited number of employments in which women can engage; (3) the superior compensation paid to female teachers, in comparison with that paid in other occupations, such as sewing, copying, etc.; (4) The fact that men of talent and enterprise can obtain a larger compensation in other fields of labor, induces most to quit the work of teaching at an early age; (5) Women are often preferred to men by superintendents and school officers on account of their being more tractable, and more willing to comply with the regulations and to carry out the policy of special systems; and (6) Considerations of economy, the salaries paid to female teachers being considerably smaller than those paid to males. The last mentioned reason, though generally very influential, in a few cases does not exist. The question of equal compensation for equal service has been much discussed, but has rarely been decided in favor of the female claimants for equal salary. The city of St. Louis makes no discrimination between male and female teachers in fixing their salaries. The California legislature of 1873 enacted that "females employed as teachers in the public schools of the state should, in all cases, receive the same compensation as is allowed to male teachers for like services, when holding certificates of the same grade."

Much has been said, in addition, as to the comparative value of the services of male and female teachers; and there is a wide difference of opinion on this point. Many contend that it is "woman's special mission" to teach, and that, therefore, the whole field should be left open to her without any competition from the other sex; and some of the school systems of the states and cities of the Union have been based, wholly or in part, upon this principle. In some of the city systems, all those regularly engaged in teaching are women, male principals being employed only for executive duty in the general management. These schools are, however, mainly or wholly, elementary schools. It is the opinion of most educators that the masculine element should have as effective scope in education as the feminine. A writer in the *Massachusetts Teacher* (April, 1874) expressed this principle in the following manner: "As soon as our youth have passed beyond the primary stage of instruction, their minds should come systematically in contact with teachers of both sexes, to such an extent that the teaching, character, and influences of one sex shall fairly supplement and qualify those of the other." A number of German educators, as G. BAUR (*Grundzüge der Erziehungslehre*), PALMER, (*Evangelische Pädagogik*), and BENEKE (*Erziehungslehre*), are generally opposed to the appointment of female teachers; but their views have not prevailed, and in Germany as well as in most of the other European countries, the scale on which female teachers are employed is steadily enlarging, and the number of training schools for female teachers correspondingly increasing. (See TRAINING SCHOOLS). It is sometimes said that female teachers are more earnest and devoted than male teachers, and consequently that their work is more successful. This might be anticipated from the fact that women pursue teaching more as a steady employment: while there are but few young men engaged in elementary schools, who are not looking forward to more lucrative and more influential occupations. In this connection, Adams, in *The Free School System of the United States* (1875), remarks: "The large preponderance of female teachers in the States will always render the occupation of teacher more or less a temporary one. As a matter quite of course, women do not look to teaching as a lifelong career. In England, scarcely one in twenty of the female teachers reaches her tenth year of service. Of the female teachers trained at Bishop's Stortford, it has been ascertained that their average school life was under five years. The proportion of female teachers in America is ten times greater than in England. Female teachers may have other advantages over males, and in the United States are generally conceded to have, but the length of their school life is not one of them."

FÉNÉLON, François de Salignac de la Mothe, a celebrated French educator and prelate, was born Aug. 6., 1651; died Jan. 7., 1715. He was, in 1674, ordained a priest, and four years later appointed *aumonier* of a society of French ladies for instructing Protestant girls in the Catholic faith. His experience in this position induced him to write a work on female education, one of the first systematic works written on the subject. When the Duke of Beauvilliers was appointed governor of the royal princes, he procured the appointment of

Fénelon as one of their educators. The results of his labors in this position gained for him a reputation as one of the most successful educators of princes that ever lived. The oldest of the princes, the Duke Louis of Burgundy, who when Fénélon was appointed was only seven years old, but already noted for a propensity to violent anger and stubbornness, became, under the instruction of Fénélon, the model of a meek, docile young prince, and was enthusiastically attached to his teacher. In 1695, the king appointed him Archbishop of Cambray; but, two years later, he fell into disfavor with the king in consequence of theological controversies with Bossuet, and was removed from his position of educator. His famous work, *Les Aventures de Télémaque*, is an educational novel, the chief object of which is to develop the principles that guided Fénélon in the education of the three princes. It was completed about the time his personal intercourse with the princes ceased. It was published against his wish, the manuscript having been stolen by a servant. The best edition of his educational works is that of Didot (Paris, 1850); the best English translation of *Télémaque* is that of Hawkesworth (4to, London, 1768, and 12mo, New York, 1859).—See also De Bausset, *Histoire de Fénélon* (Paris, 1808).

FERULE (Lat. *ferula*, from *ferire*, to strike), an instrument used in inflicting corporal punishment in schools. Allusion is made to it by Horace and Juvenal; by the latter in the remark, *manum ferulæ subduximus*. Among the Romans, this was the instrument for the lightest kind of punishment; of a much severer kind were the *scutica*, made of twisted strips of parchment, and the terrible *flagellum*, a whip consisting of thongs of hard ox-hide. The exact form of the *ferula* as used by the Romans is not known; in modern times, it was a flat piece of wood, narrow at the handle, generally with a small hole in the middle of its broad part, for the purpose of raising a blister on the offender's hand. Sometimes, it was a broad leather strap, about ten inches long, and at its broad part about four or five inches wide, fastened to a wooden handle. The Scotch ferule, called the *taws*, was a leather strap with one end cut into strips and hardened in the fire.—See Cooper, *History of the Rod.* (See also Corporal Punishment.)

FESTIVALS, SCHOOL. See School Festivals.

FICHTE, Johann Gottlieb, one of Germany's greatest philosophers, and one of the most noted writers on the subject of national education, was born May 19., 1762, and died Jan. 28., 1814. He was, for some time, professor of philosophy at Jena; but being charged with atheism by some persons who had completely misunderstood him, he left that university, and went to Berlin, where he afterward became a professor. His philosophy is a development of that of Kant, and rests entirely upon the notion that the mind constructs its objects by an internal necessity. All activity, as well as the condition of the existence of all things, depends upon the *ego*. Very many profound remarks and fine psychological analyses occur in his philosophical writings. His bent of mind was strongly ethical; he viewed nature as valueless except as a means for developing the moral character of the individual. Like Kant he had the greatest abhorrence of all utilitarian ethics, and would not sanction any attempt to reduce the moral law to a means of gaining either happiness or heaven. His addresses to the German nation, delivered while Napoleon was in Berlin, are full of this ethical rigor, and are so stirring, that it is a wonder that Napoleon suffered him to deliver them. His connection with pedagogy consists in his emphatic enunciation of the doctrine that education must be an unfolding of the whole nature, moral as well as mental. The mere acquisition of knowledge he viewed as the smallest part of education. The great aim of instruction is to make good men; or, since will was the man with him, to develop a will to do right. His hatred of selfishness—which was probably much increased by the political events of his time—brought him into sharp antagonism with the prevailing theories both of education and of religion. He complained that the aim of the schools was simply to make men knowing, and that they were utterly indifferent to their moral development. Religion itself, he said, as taught, ministers to selfishness by its theory of rewards and punishments. Selfishness was, for him, the root of all evil, and tainted the old methods in church, school, and state. The new education, therefore, must aim to produce complete and unselfish men. This demand for unselfishness led Fichte, in his *Addresses to the German Nation* (the book which contains his leading utterances on education) to lay down a theory of state or national education, in which the rights of the individual do not receive proper recognition. This was a necessary revolt from the individualism of the previous century, but it was no less one-sided, and prepared the way for the opposite theory of Herbart. Concerning Fichte as an educator, see Schmidt, *Geschichte der Pädagogik;* and Struempell, *Die Pädagogik der Philosophen Kant, Fichte, Herbart* (1843). See also *Fichte's Leben und Briefwechsel*, edited by his son, J. H. Fichte (2 vols., 1830—31); and Dittes, *Schule der Pädagogik* (Leipsic, 1876).

FICTION, Works of, constitute an important part of the literature used in the education of children. The young mind delights in interesting tales, and receives impressions therefrom, deeper and more durable perhaps than those derived from any other source. While it instinctively perceives what is fictitious in the scenes and incidents of the story, it imbibes as true the characters of the personages and their relations; that is, it feels that such characters and relations may, possibly or actually, exist in real life. Hence, the awe with which children listen to supernatural narratives is due not only to the excited condition of their imagination, but to the feeling that had such things never existed they would not have formed part of the story; for stories are felt to be senseless and idle that tell of things entirely impossible. This principle may serve to guide the educator in selecting or rejecting works of fiction for the young. They must be looked upon as powerful instruments in either benefiting or corrupting the minds of children. The writings of Mrs. Barbauld, Miss Edgeworth, Berquin, and in part those of Hans Andersen, are illustrative of this principle. Some of the stories of the latter must be classed among the impossible, and hence are much less instructive and interesting to children. Nor do children take any real interest in those stories usually found in Sunday-school books, which are designed to improve their moral and religious nature by presenting examples of juvenile virtue and goodness, such as they never behold in real life, and which they, therefore, look upon as sentimental and of no account. "There is," said Margaret Fuller, "too much amongst us of the French way of palming off false accounts of things on children, 'to do them good', and showing nature to them in a magic lantern, 'purified for the use of childhood', and telling stories of sweet little girls and brave little boys, — O, all so good, so bad! and, above all, so *little*, and every thing about them so little! Children accustomed to move in full-sized apartments, and to converse with full-grown men and women, do not need so much of this baby-house style of literature. They like, or would like if they could get them, better things much more. They like the *Arabian Nights*, and *Pilgrim's Progress*, and *Bunyan's Emblems*, and *Shakespeare*, and the *Iliad* and *Odyssey*, — at least, they used to like them; and if they do not now, it is because their taste has been injured by so many sugar-plums." In the same spirit, Rosenkranz says, "The purest stories of literature designed for the amusement of children from their seventh to their fourteenth year, consist always of those which were honored by nations and the world at large. One has only to notice in how many thousand forms the stories of Ulysses are reproduced by the writers of children's tales. Becker's *Tales of Ancient Times*, Gustav Schwab's most admirable *Sagas of Antiquity*, Karl Grimm's *Tales of Olden Times*, &c. — what were they without the well-talking, wily favorite of Pallas, and the divine swineherd? And just as indestructible are the stories of the old Testament up to the separation of Judah and Israel. These patriarchs with their wives and children, these judges and prophets, these kings and priests, are by no means ideals of virtue in the notion of our modern lifeless morality, which would smooth out of its pattern stories for the 'dear children' every thing that is hard and uncouth."

By means of suitable works of fiction, the minds of children and youth may be cultivated in several respects; (1) By imparting vivid conceptions of persons and things; (2) By impressing upon them sentiments of virtue, courage, and patriotism; (3) By developing and training the imagination and the taste. Such were the reasons which prompted Fénélon to write *Télémaque*, and probably Xenophon in the composition of the *Cyropædia*: and this office of fiction as a vehicle of instruction and moral elevation has been recognized by most, if not all, great educators. Pestalozzi selected it as the most effective means of reaching the popular mind. In his *Leonard and Gertrude* (1784), he laid the foundation for a national pedagogical literature. "As real history," said Lord Bacon, in *The Advancement of Learning* (*De Augmentis Scientiarum*), "disgusts us with a familiar and constant similitude of things, *fiction* relieves us by unexpected turns and changes, and thus not only delights, but inculcates morality and nobleness of soul. It raises the mind by accommodating the image of things to our desires, and not, like history and reason, subjecting the mind to things." There are, however, dangers to be avoided in using fiction as an educational agent, which we may thus briefly summarize: (1) By its exciting character, it may so occupy or intoxicate the mind, as to destroy the taste for more solid and useful reading. Such is uniformly the result of permitting children to read the wild, romantic, and startling stories, with which some of the juvenile periodicals of the day are filled. The constant perusal of such narratives is baneful; like ardent spirits, it intoxicates but does not nourish. (2) In the case of narratives which present instances of suffering, the sympathies are expended upon fictitious objects, and pity thus becomes habitually a mere sentiment, instead of prompting to active beneficence. "In the healthy state of the moral feelings," says Abercrombie, "the emotion of sympathy excited by a tale of sorrow ought to be followed by some efforts for the relief of the sufferer. When such relations in real life are listened to from time to time without any such efforts, the emotion gradually becomes weakened, and that moral condition is produced which we call selfishness, or hardness of heart." (3) By presenting to the young mind fictitious scenes of immorality, vice, or crime, it becomes familiar with their associations, and is thus depraved. (4) By impressing upon the mind false conceptions of the enjoyments, duties, and objects of life, it may be the means of producing a kind of infatuation, unfitting for every sphere of useful employment. Johnson, in *Rasselas* well describes this mental condition: "The mind dances from scene to scene, unites all pleasures in all combinations, and riots in delights which nature and fortune, with all their bounty, cannot bestow. In time, some particular train of ideas fixes the attention; all other intellectual gratifications are rejected; the mind, in weariness or leisure, recurs constantly to the favorite conception, and feasts on the luscious falsehood whenever she is offended with the bitterness of truth. By degrees the reign of fancy is confirmed; she grows imperious, and in time despotic. Then fictions begin to operate as realities, false opinions fasten upon the mind, and life passes in dreams of rapture or of anguish." (See IMAGINATION, CULTURE OF.)

FINE ARTS, a term which has, of late, undergone considerable modification. Formerly, it was the collective name of all those arts which, through the power of invention or imitation, are designed to produce pleasure in the mind; such as poetry, music, etc. Fine arts, in the widest sense of the word, constitute an important agency in every complete system of education; for the element of beauty, which exists in the human mind and should be trained no less than the intellect, the will, or the conscience, depends for its development, to a great extent, on the proper application of the arts of poetry, music, and drawing. (See ESTHETIC CULTURE, and ART-EDUCATION). More recently, the meaning of the term *Fine Arts* has been restricted to painting, sculpture, engraving, and architecture, which influence us through the eye. In a still narrower sense, it is somtimes applied to painting and sculpture exclusively.

Special art schools may be divided into two large classes,—schools of a lower grade, chiefly intended for industrial purposes, and embracing instruction in drawing, modeling, and design; and schools of higher grade, specially intended for the instruction of young artists in the fine arts, according to the more restricted sense of that term. The former class has been fully treated of under the head of *art-education* (q. v.). The schools of the latter class have generally been designated by the name *Academies of Art*. In ancient times and in the middle ages, schools of this kind were unknown; and the young artist was educated in the *atelier* of his master, by being trained to take an immediate and active part in the master's work. The first institution which bears a similarity to our present academies of art, was founded at Padua by Squarcione, who, by his collection of antique works of art and by encouraging a thorough study of antique art, exerted a powerful influence upon the Italian artists of the 15th century. The school which was opened by Leonardo da Vinci at Milan, is designated by the name of *academy*, and even at that early period contained the principal features of the modern academy of art, the personal element of the *atelier* being enlarged by general instruction. The entire separation of the academy of art from the *atelier* began in the school of Bologna, founded by Lodovico Caracci, and soon met with general approbation. The influences proceeding from Louis XIV., closely attached art to the royal courts, and converted the academies of art, to a large extent, into court institutions. Among the most famous institutions of this kind, were the schools of Paris, founded in 1648, of Berlin, in 1694, Dresden, in 1697, and Vienna, in 1726. The revival of the fine arts, in modern times, caused also a revival of the academies of art and raised them to a higher standard. It, moreover, reestablished the close connection which formerly existed between instruction and the work of the *ateliers*. Great celebrity, in modern times, has been attained by the schools of Munich and Dusseldorf. In Great Britain and Ireland, there are also schools for artists, located in London, Edinburgh, and Dublin. France has 3 schools of fine Arts; and Italy, 25 academies and institutes. Russia has imperial academies of art at St. Petersburg and Warsaw, and a school of painting and sculpture at Moscow. The schools for artists in the United States have already been mentioned in the article on *Art-Education*.

FINLAND, a grand duchy in the northwestern part of the Russian Empire, having an area of 144,258 square miles, and a population, in 1872, of 1,835,138. Of this number, about five-sixths are Finns; and of the remainder about 30,000 are Swedes, and 4,000 Russians. The great majority of the inhabitants belong to the Lutheran Church, very few of the native Finns having joined the Greek Church. Less is known of the early history of Finland than of any other country of Europe. It was originally governed by independent kings; but, in the middle of the 12th century, it became subject to the kings of Sweden, who introduced Christianity, and retained their hold upon it up to 1809, when it was ceded to Russia. The Swedish language had taken such a deep root, however, that the Russians have not been able to eradicate it up to the present day. Very little was done for education in Finland up to the 17th century. In 1626, a gymnasium was founded in Abo, the pupils of which were educated to serve as clergymen; but, in their learning and manners, they were not much better than the great mass of the people. In 1640, Abo obtained a university; but the great obstacle to the spread of education, was the want of books. In 1642, a Finnish Bible was published at the expense of the government; and, by the efforts of the governor, Peter Brahe, the schools were greatly improved. During the northern war, which lasted up to 1721, Finland suffered very much; but, after the conclusion of peace, education was revived, both in the Swedish and Russian parts of the country; and institutions of learning were every-where established. At the present time, education is well cared for, and the Finnish language, which had been neglected under the Swedish rule, is encouraged by the Russian government. A large number of native Finns were sent to Germany and Switzerland, in order to study the educational systems of those countries, and to become acquainted with them, both theoretically and practically. Among them, one of the most prominent was Uno Cygnäus, who, on his return, advocated manual labor as a means of education; and, in his proposition for the organization of a public-school system for Finland, he embodied this idea. In 1863, he was intrusted with the organization of a Finnish seminary for public-school teachers in Jyväskylä. This met with so much success, that in 1871, two more were organized for Swedes,—one at Ekenäs for female teachers, and the other at Ny-Karleby for male teachers. According to the latest accounts, there were 71 elementary schools, with about 9,000 scholars. Secondary instruction is imparted in 6 gymnasia; and, for superior instruction, there is one university at Helsingfors, with 48 professors. Special instruction is provided for in the following schools: one cadet corps at Frederikshamn. three navigation schools, three technological schools, three commercial schools, one institute for rural economy, at Mustiala, ten agricultural schools, six industrial schools for girls, and one female academy, or high school, at Helsingfors.— See BUSCH, *Beiträge zur Geschichte und Statistik des Kirchen- und Schulwesens des Grossfürstenthums Finnland* (1874).

FISK UNIVERSITY, at Nashville, Tenn., was established by the American Missionary Association in 1866. The name was given in honor of Gen. Clinton B. Fisk, then chief of the Freedmen's Bureau for Tennessee, who aided in its establishment. It was known as the Fisk School till 1867, when it was incorporated as a university. It makes no distinction of race or sex, but the institution was especially designed for colored youth, and the students are mainly colored. It has received some aid from the Freedmen's Bureau and the Peabody Fund, and a gift of between three and four acres of land from the United States; but its support is chiefly derived from the Association. In 1871, a number of the students were organized as a singing band, known as the "Jubilee Singers." These and their successors, by concerts in the Northern states and in England, earned clear of expenses $130,000, which was devoted to the purchase of a permanent site for the University, comprising 25 acres, in a beautiful situation in the suburbs of the city, and to the erection of a fine building (dedicated Jan, 1., 1876), called Jubilee Hall. The singers are now (1876) in England, engaged in the effort to raise an endowment of $100,000 for the institution. The property of the university is valued at $176,000; its library contains 1,300 volumes; and it has chemical and philosophical apparatus, and a collection of over 3,000 specimens in natural history, geology, and zoölogy. Six courses of study have been organized; namely, a collegiate, a college preparatory, a higher normal, a theological, a normal, and a primary course. Other courses, including law and medicine, are to be added as soon as they are required. The first college class, consisting of 4 students, graduated in 1875. In 1875—6, there were 14 instructors. The number of students was as follows: in the college course, 11; in the college preparatory, 38; higher normal, 16; theological, 13; normal, 93; primary, 63; total, deducting repetitions, 212. The tuition fees vary from $9 to $13 per year. Prof. John Ogden was principal of the institution from 1866 to 1870; and Prof. A. K. Spence, M. A., from 1870 to 1875. In 1875, the Rev. E. M. Cravath, M. A., was elected president.

FLATTICH, Johann Friedrich, a German educator of the Pietistic School, was born October 30., 1713, at Baihingen, near Ludwigsburg. He was successively garrison chaplain at Hohenasperg, and pastor at Metterzimmern and at Münchingen, at the latter of which places he died, June 1., 1797. He was generally regarded in Germany as one of the most successful educators in the country; and there were always, at his parsonage, classes of pupils of all ages and various grades of advancement. He seemed to prefer as pupils those children whose parents were unable to manage them, or who seemed defective in mind or manners. He sought to avoid severity in discipline, and to govern by love. He objected to the use of the rod, not, he said, because it was not necessary with many, but because it was difficult to use it aright. He believed that the methods of instruction should be adapted to each child, according to his special disposition and endowments, the circumstances of his age, his bodily and mental strength, his disposition, his family condition, and the calling to which he was destined. Progress in instruction should be made by slow steps, beginning with teaching of a simple character, and gradually building up the understanding, and strengthening the mental powers. Flattich's fame rests not so much on his actual work as a teacher, on the distinction attained by any of his pupils, or even on his written works, as on the pithy maxims in which he expressed his views on education. These maxims are often quoted in Protestant works on the subject, and have had considerable influence in molding the theory of teachers.— See LEDDERHOSE, *Leben und Schriften des M. Johann Friedrich Flattich* (4th edit., Heidelberg, 1859); SCHÆFER, *Flattich und sein pädagogisches System* (Frankfort, 1871).

FLORIDA was ceded to the United States by Spain, by a treaty concluded in Washington in 1819, but not ratified till 1820. In 1821, the United States authorities took formal possession of its new dominions; and in 1822, President Monroe appointed William Duval of Kentucky governor of the territory. It was admitted into the Union as a state, March 3., 1845. Its population, in 1830, was reported to be 34,730, of whom 15,501 were slaves; in 1870, according to the census of that year, the population was 187,748, of whom 91,689 were free colored persons. The number of inhabitants, of all races, 10 years old and upward, unable to write, was 71,803. Of these 18,904 were whites, of whom 5,083 were from 10 to 15 years old, and 4,345 from 15 to 21. Of the colored inhabitants 52,894 were reported as illiterate. The area of the state is 59,268 square miles.

Educational History.— As early as 1839, a provision was inserted into the proposed constitution that the lands received for "the use of schools and seminaries of learning" should be held inviolate; but there was no efficient common-school system in the state previous to 1869. In 1840, five years before the admission of Florida into the Union, there were 18 academies and grammar schools, with 732 students, and 51 common and primary schools, with 925 pupils. According to the census report of 1850, there were 10 academies and 69 common or public schools. In 1860, the census report gave Florida 97 public schools, with 2,032 pupils; and 138 academies and other schools, with 4,486 pupils. The whole educational income was $75,412, of which $2,045 was from endowments. The constitution of 1865 contained a provision designed to secure for the benefit of the schools of the state the income derived from the school lands; but little was done to promote the cause of education till the passage of the school law, Jan. 30., 1869, on which the present school system is based.

State Superintendents.—The first state superintendent of public instruction was C. Thurston Chase, appointed Aug. 13., 1868, under whose advice and direction the school law of the following year was enacted. He held the office until his death Sept. 22., 1870; and Rev. Charles Beecher was appointed to succeed him March 18., 1871, who served until Jan. 23., 1873, when, a new administration coming into possession of the state government, he was superseded by Jonathan C. Gibbs. The latter held the office till his death, which occurred Aug. 11., 1874. William Watkin Hicks, the present incumbent, was appointed March 1., 1875.

School System.—The school law provides for the establishment of a uniform system of public instruction free to all children between the ages of 6 and 21 years. The officers of the department of public instruction consist of a superintendent, a state board of education, a board of public instruction for each county, a superintendent of schools for each county, local school trustees, treasurers, and agents. Each county board of public instruction consists of not more than five members, appointed by the state board of education. The board of education consists of the superintendent of public instruction, the secretary of state, and the attorney general, the superintendent being the president of the board. Its duties are, to take charge of and control the sale or rental of all lands granted to, or held by, the state for educational purposes; to have charge and direct the use of all educational funds of the state; to audit the accounts of the superintendent; to decide questions and appeals referred to them by the superintendent; to remove subordinate officers for cause; and to keep in view the establishment of a university, the object of which shall be to impart instruction in the professions of teaching, medicine, and law, in natural science, the theory and practice of agriculture, horticulture, mining, engineering, and the mechanic arts; also in the ancient and modern languages, higher mathematics, literature, and in such useful and ornamental branches as are not taught in the common schools. The superintendent holds office four years, and is required to have the oversight, management, and charge of all matters pertaining to public lands, school buildings, grounds, furniture, libraries, text-books, and apparatus; to furnish all school officers with the necessary blanks for official returns, and information regarding the proper discharge of their duties; to provide plans and specifications for the construction and furnishing of school buildings; to call meetings of county superintendents and other officers for the purpose of advising and instructing them as to their duties; to grant certificates to successful teachers, and to fix the grades and standards of qualification of teachers in general; to apportion the interest of the school fund and that raised by the one-mill tax among the counties in proportion to the number of children residing therein between the ages of 6 and 21; to decide questions and appeals arising under the school act, or to refer the same to the board of education; to collect and preserve useful educational and historical documents, and specimens of natural history. Each county board is constituted a corporate body, and may take and hold real and personal property for educational purposes. Its duties are to have charge of all educational property in the county; to locate and maintain schools where needed, so as to accommodate all the children of school age in the county, not less than three months of each year; to examine candidates for teachers' licenses, and grant certificates to those found competent; and to keep a record of its official proceedings. The county superintendent is secretary *ex officio* of the board of public instruction; and, in addition to keeping the records, he is required to make himself acquainted with all parts of the county, and to keep himself informed of the needs and wishes of the people in regard to schools; to visit each school at least once in each term, and to confer with and direct the teachers in their work; to exercise a supervision over the trustees, the general management of the schools, and do all in his power to awaken an increased interest in parents, trustees, and teachers, in regard to every thing pertaining to the welfare of the schools; also to select persons for trustees, whose characters, qualifications, and sympathy with education specially commend them for such positions; to decide questions in dispute, or refer them to the board of public instruction; to keep a record of the name, description, and locality of every school established; and to perform the duties, as far as may be necessary, of the board of public instruction, in case such a body should not be organized, or should fail without good cause to perform its duties. The school trustees are required to take special charge of the schools in their respective localities, to see to the construction and safe-keeping of the school buildings and other property, to co-operate with the teachers in maintaining order and discipline, to suspend or expel pupils for misconduct; and to make a quarterly report to the county superintendent.

Certificates of qualification to teach, valid for one year, may be granted by the county boards of public instruction, also by the state superintendent to graduates of the Department of Teaching, and to eminently successful teachers, valid in any part of the state during the time specified. These certificates are of three grades, the standard for each being fixed by the state superintendent. A certificate may be annulled by the authority which issued it, for any cause which would disqualify a candidate for a license.

Teachers are specially directed to labor earnestly and faithfully for the advancement of the pupils in their studies, and to inculcate by precept and example the principles of truth, honesty, patriotism, and the practice of every Christian virtue; to require the pupils to observe personal cleanliness, order, and good manners, to cultivate in them habits of industry and economy, a regard for the rights and feelings of others and for their own responsibilities and duties as citizens; to see that the buildings and furniture are not unnecessarily defaced or injured; to enforce needful discipline, avoiding unnecessary severity and measures degrading in their tendency; to suspend pupils from school for ten days for gross immorality, misconduct, or persistent violation of the school regulations; and to hold a public examination each term. The reading of the Bible and short devotional exercises of a non-sectarian character, at the opening of the school, are not to be prohibited; but no pupil is to be required to engage in them against his conscience, or contrary to the wishes of his parents or guardian.

A *school day* is defined to consist of six hours exclusive of recesses; a *school month*, of twenty-two days, exclusive of the first and last day of each week; a *school term*, of three months; and a *school year*, of three terms.

School Fund.—The school fund consists of the 16th section of the various townships set apart by act of Congress for common-school purposes, the original amount of which, in Florida, was 704,692 acres, of which 115,184 have been sold (1875); state bonds amounting to $205,252,63; and various donations by individuals for educational purposes. Besides the income from these sources, there are appropriations by the state; the proceeds of all property granted to the state, when the purpose of the grant is not specified; all moneys which may be paid for exemption from military duty; all fines collected under the penal laws of the state; such portion of the *per capita* tax as may be prescribed by law for educational purposes; twenty-five per cent of the proceeds of the sales of public lands which are now or may hereafter be owned by the state; a special tax of not less than one mill on the dollar upon all taxable property in the state, to be levied and apportioned annually for the support of common schools; a county tax to be raised by each county, annually producing a sum not less than one-half of the amount apportioned to each county from the income of the common school fund.

The *seminary lands* were granted by Congress for the support of two seminaries, one to be located east, and the other west of the Suwanee River, and amounted originally to 85,714 acres. Of these about 38,000 acres remain unsold. The sum realized by the sale of these lands has amounted to about $100,000; and the estimated value of the remainder is about $75,000. In addition to this, there are Florida 6, 7, and 8 per cent bonds, amounting to $81,492.45. There is no uniform *course of instruction* established as yet in the state. In the high schools, the usual higher English and classical studies are pursued; also the modern languages. The *salaries of teachers*, in the high schools, range from $75 to $175 a month; and, in the common and primary schools, from $20 to $60 a month, according to the number of pupils and the qualifications of the teachers.

Educational Condition. — There are three grades of schools,—high, common, and primary, in the principal towns; in the country schools no grading is at present possible. The whole number of schools, in 1874, was 557, all of which were common or primary except 6 high schools, located as follows: in Jacksonville, 2, — Duval High School and Staunton Institute; in Pensacola, 1; in Key West, 1; in Monticello, 1; and at Fort Reid, 1.

The following are the principal items of the school statistics for 1874:

Number of pupils enrolled	21,196
Average daily attendance	15,897
Number of teachers, male and female	650
Receipts from all sources	$103,774.53*
Total expenditures	$139,870.61

There are no city-school systems proper in this state, the management of all the schools in each county being in the hands of the county board of public instruction.

Seminaries.—The Middle Florida Seminary, located at Gainesville, and the West Florida Seminary, at Tallahassee, are supported by the special funds above mentioned. They are free to all the youth of the counties in which they are situated, and to those of the adjoining counties. The course of study includes common and higher English branches, with the classics and the modern languages. There are also several private and denominational schools in various parts of the state.

Superior Instruction.—There is no institution for superior instruction in Florida; but a state agricultural college has been planned and provided for by law, and was to have been inaugurated some time ago; but this has been delayed by pending litigation in regard to the constitutionality of the state bonds in which the college funds had been invested. Of this college when established the state superintendent of public instruction will be *ex officio* the president.

Educational Literature. — The *Fernandina Observer* is the official organ of the state educational department.

FOREIGN EDUCATION. By this is meant the education of children in foreign countries. Parents in the United States sometimes send their children to France or Germany to be educated, in preference to having them instructed in the schools of their native country. The custom also exists to some extent in Great Britain. The motive which prompts this course is the desire that their children shall have the best means of instruction, and the impression that this is afforded by the teachers and schools of Europe.

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* Including $8,000 from the Peabody fund.

Very frequently, however, it arises from the wish on the part of parents to accomplish their children in foreign languages, particularly French and German. "Some parents," says Von Raumer, "who think no attainment valuable in comparison with a facility in speaking French, send their daughters to French or Swiss schools, where they can hear and speak nothing but French. In such a foreign atmosphere they too often become estranged from their native home and country." "For our youth," says B. G. Northrop, "American schools are better than European. To send our boys and girls away to a foreign boarding-school is a great mistake, or rather one of the fashionable follies which is just now having its day." Parents who adopt this course, seem to lose sight of the important fact that the school is not the only educator, nay, is not generally the most effective means of education. The influences that cluster around the home-circle, and that emanate from the peculiar laws, customs, manners, and institutions of the country in which the child lives, leave their indelible impress upon the plastic character of youth; and these influences should be such as to form a character in harmony with the life of the nation of which the child when grown up is to form a part. Linguistic and esthetic training cannot be a satisfactory substitute for this national culture. It is of little use that young men or women know how to speak fluently and correctly French, German, Italian, or any other foreign language, or excel in either judging or executing works of art, if they are ignorant of, or indifferent to, the language and institutions of their own country. Children growing up in a foreign land must necessarily imbibe a predilection for foreign manners, customs, and sentiments, because these are inseparably associated with the most delightful part of their existence. Every one reverts with pleasure to the scenes of childhood, consecrated in the mind, as they are, by the memory of the enjoyments peculiar to that age. It is this that renders the foreign education of children so dangerous, as tending to unfit them for the duties of special citizenship. How often do we hear the most unfavorable criticism pronounced upon the institutions and customs of the native country by those whose notions, associations, and modes of thought have been formed by a foreign education! "The experience of American colleges," says B. G. Northrop, "is believed to be nearly uniform, as to the superiority in the qualification of candidates trained at home over our youth prepared for college abroad. The number of the latter class is relatively small; but the instances of eminent success, either in college studies or practical life on the part of American boys chiefly educated abroad, are rare and exceptional."

These objections, of course, do not apply to the practice of sending abroad young men and women of more mature age, either to finish their education in foreign schools or universities, or to acquire a knowledge of some special arts in technical schools, because the national character having been once fully formed, is not easily affected by later influences and conversations. Young men, among the Romans, particularly in the later periods of the republic, were often sent to Greece and other countries to finish their scholastic or literary education. Thus Cicero addresses his *De officiis* to his son Marcus, then a young man of 21, who had been for some time pursuing his studies in the schools of Athens. In the same manner and with equal propriety, a young man may be sent from the United States to any of the great European universities, either in Great Britain or on the continent, to pursue linguistic, scientific, technical, artistic, or other studies, for which those institutions are able to afford greater facilities than are offered at home.

Foreign travel constitutes an important part of a complete education, and is not at all subject to the objections which are urged against a foreign elementary education. Nothing more enlarges the mind than the observation of the manners, institutions, etc., of foreign countries. New and vivid ideas are impressed upon it; narrow prejudices are removed; and a foundation is laid for just and liberal thought. This, however, should occur at a comparatively mature age, and should be preceded by sufficient education to fit for the observation of things abroad. "Foreign travel," says Bishop Watson (cited in Knox on *Liberal Education*), "is of great use when it is undertaken by men who have learned to bring their passions under the control of reason and religion; who have had some experience in life, acquired some knowledge of the manufactures, policy, revenues, and resources of their own country."—See NORTHROP, *Education of Americans abroad* (New York).

FORM, one of the most important branches of object teaching, since, from the first dawn of intellect, the endless variety of forms presented to the child's sight constitutes perhaps the most effective means of awakening and exercising its perceptive faculties. The first comparison which the young child makes between the objects of its perception must be based upon their resemblances, the conscious perception of differences occurring somewhat later. This arises from its need of forming general ideas as preliminary to the exercise of its thinking powers. (See INT. ED'N.) The diversity of forms, like that of color, as seen by the child, very greatly interests it and attracts its attention; and, hence, when formal education begins, the child has already accumulated in its mind, in a rude and indefinite way, many materials which the expert teacher will use, in guiding his pupil to more exact knowledge. The untaught child's vocabulary of terms to denote the various forms which it has seen is very meager; and, hence, its conceptions are too indefinite to form the materials for conscious thought. They are, as it were, only embryotic thoughts, to be developed by the power of language. Hence, an important office of the instructor is to teach the proper term, or word, by which each particular object of the child's attention is to be designated, and in this way clearly individualized. For example, a young child intuitively perceives the difference between the form of a round object and a square one; but before the terms *round* and *square* have been learned as the names of these forms, they cannot be used by the mind in any process of thought. Besides, the young mind, in the exercise of its unaided powers, is chiefly occupied with the observation of resemblances and analogies, and only after the guidance of the teacher, comes to recognize clearly points of difference, the *sense of analogy*, as it has been called, taking the lead in the first stages of mental development.

In making use of *form* as a basis for training the observing faculties the teacher should be guided by the following principles: (1) Resemblances are perceived before differences; (2) The concrete precedes the abstract; (3) Every object is perceived as a whole before its component parts are noticed; (4) Every idea must have its proper verbal designation to be clearly and permanently fixed in the mind. The teacher should, therefore, begin with simple regular forms, such as the cube, prism, parallelopiped, pyramid, sphere, cone, and cylinder. These, at first, should be all alike in material and color, and about the same in size, so that the teacher may clearly develop the idea of *form*, as the rudimental step in the instruction. At first the process should be very slow. Thus the teacher holds up to the view of the pupils a cubical block of wood [one of the box of solids usually employed in such lessons], and asks, "What is this?" And the children probably reply, "A piece of wood." Then the teacher presents successively the sphere, cone, cylinder, etc., asking the same question and obtaining the same answer. The teacher then says, "Each of these is a piece of wood; are they all alike?" To which the children answer, "No." "Do they differ in color?" "No." "In size?" "No." This leads the teacher to show, in a very general way, not by giving names at first, but by directing the pupils' attention, that the objects differ in *form*; that is, each has its own peculiar form. The teacher may then go back to the *cube*, and ask the pupils to mention any other things they have seen which have the same form as the block of wood; and so on with the other forms. This exercise being a perfectly natural one will awaken interest, besides familiarizing the children with the particular forms presented. The next step will be to lead the children to observe the points of difference between these forms; and, in order to do this, the analytic process must begin. Thus, the teacher develops the idea of *side* or *face*, and the pupils perceive that the *cube* has six *faces*; the *edges*, *corners*, and *equality of faces* and *edges* may then be observed. When the pupil has perceived the distinctive characteristics of the form, its name, as *cube*, *prism*, etc., may be taught. This method requires the teacher to begin with solids (as the *concrete*) and to deduce from the observation of them the ideas of *surface*, *line*, and *point* (as the *abstract*), in accordance with the principle (2). After these ideas have been thus developed, and the method of representing lines and figures on the blackboard shown to the pupil, he is prepared for varied slate and blackboard exercises on the positions and combinations of lines both straight and curved, to be followed by similar exercises on plane figures. The study of *form* thus passes into that of *drawing*, in connection with which inventive exercises of a simple character may be employed, the children being shown how to combine lines and figures into simple patterns or designs. Of a similar but more elementary character are block combinations, which will serve to interest and instruct very young children. Boxes of blocks made for this purpose, with designs for construction, can be readily obtained. Charts containing diagrams of plane figures will also be found very useful in giving lessons on form. These lessons should be systematic, not desultory, but regularly arranged, with the underlying principle kept steadily in view. Especially should the teacher guard against requiring the pupils to commit to memory formal geometrical definitions, the chief point to be attained being the discipline of the observing faculties.—See Currie, *Principles* and *Practice of Early School Education* (Edin. and Lond.); Hailman, *Outlines of Object-Teaching* (N. Y., 1867); Calkins, *Primary Object Lessons* (N. Y., 1871); *How to Teach* (N. Y., 1874).

FORT WAYNE COLLEGE, at Fort Wayne, Ind., founded in 1846, is under the patronage of the North and North-West Indiana Conferences of the Methodist Episcopal Church. It is situated in the most pleasant part of the city, and occupies a large and commodious edifice. It comprises six departments: the college (with a classical and a scientific course), the normal, commercial, and academic departments, and those of music and art. It is supported by tuition fees, and both sexes are admitted. In 1875—6, there were 11 instructors and 132 students. The Rev. Reuben D. Robinson, D., D., is the president of the college (1876).

FOUNDLING ASYLUMS are institutions in which children are received who have been abandoned by their parents. The Christian Church, in the earliest period of its history, provided for foundlings; and, as early as the sixth century, a foundling asylum is said to have existed in Treves. But the first institution of this kind of which we have any authentic information is that of Milan, founded in 787. Others followed in course of time, and they spread rapidly. Later, they disappear from the Germanic countries, and principally from those in which the Protestant faith prevailed; while they continued to spread in the Catholic and Romanic countries. Particularly have they increased in France, and wherever French influence has predominated. Thus in France the number of foundlings received in asylums increased from 40,000, in 1784, to 129,700 in 1834. In Austria proper, there were, in 1872, 15 foundling asylums, taking care of 13,725 children in the institutions, and 42,460 outside. The number of foundlings annually received in Rome is estimated at 3,000; in Naples, at 2,000; and in Tuscany, at about 12,000. Spain had, in 1860, 149 asylums, with 53,464 foundlings. Portugal had, in the same year, 21 asylums, with 33,500 foundlings, 16,000 being received annually. England has foundling asylums in London and Wanstead. The institution in London, in 1870, maintained 504 children. The only asylum in Dublin was closed in 1835. Norway has several institutions of this kind, and the number of foundlings has, for some years, been more than 9 per cent of the total number of births. Sweden has also an asylum at Stockholm. There are but few foundling asylums in the United States, the children being generally brought to the alms-houses. In New York, a Catholic asylum was founded in 1869, which received considerable aid, in money and grants of land, from the state. Besides this institution, there are several others in the same city, all, however, established and controlled by private charity. The Nursery and Child's Hospital, founded in 1854, has, however, a school, which is partly supported from the state school fund. This asylum has a country branch on the north shore of Staten Island. Nowhere, in the United States, has the government taken any further part in the erection of foundling asylums, than to aid them with money and grants of land. Considerable difference of opinion exists as to the utility of foundling asylums. One of the chief objections raised against them is the excessive mortality of the children; but this has been greatly reduced by sending the children into the country, and boarding them out in private families. Very little has been done for the education of foundlings, at least in the asylums, as they are sent to other institutions for instruction, and continued there up to their thirteenth or fourteenth year, after which they are provided with places of employment, generally as apprentices to farmers and others. In Rome, a large number of the children are educated in families. The boys that return to the asylum, are sent to the foundling asylum in Viterbo, where they learn trades up to their twenty-first year, when they are dismissed with a present of 10 *scudi*. If they remain in the families, they are educated in the same manner, and, when of age, receive a similar present. The girls are kept in the families or in the asylum until they marry, when they receive a dowry of 100 *scudi*. In Russia, foundlings are educated for a trade or profession ; and those who show particular talents are sent to the university. Here also the children are boarded in private families as much as possible. In Russia and France, agricultural colonies have also been established, where the boys are brought up as farmers.—See HUEGEL, *Die Findelhäuser und das Findelwesen Europa's* (1863).

FOURIER, Pierre, the founder of an educational order of the Catholic Church, was born at Mirecourt, Lorraine, in 1565, and died in Gray, Franche-Comté, in 1640. He studied, for a time, in the university of Pont-à-Mousson, where he led a very strict life. At the age of seventeen years, he began to teach in the highest families, and conceived the plan of devoting his entire life to the education of youth. He entered the order of *Prémontré;* and when the dissolute monks compelled him to leave the order, he became the parish priest of Mataincourt, where he gained a great reputation as an educator. In 1598, with Alice Le Clerc and other nuns, he formed an educational institution for girls. In 1603, he obtained a papal bull for the organization of the society of *Notre Dame de Lorraine,* of which Alice Le Clerc was the first abbess; and this society was confirmed by Paul V., in 1616. The order spread rapidly and has, at present, flourishing establishments in France, Hungary, Canada, the New England States, and Chili, with its central house for America in Montreal. He also reformed the canons of the order of *Prémontré,* who bound themselves to the education of christian youths. In 1632, he was elected superior general of the new society, which called itself *St. Sauveur de Lorraine.* He was beatified Jan. 29., 1730, and is generally styled the *Blessed Peter Fourier.*—See RITTER, *Der selige P. Fourier* (Linz, 1855).

FRACTIONS. See ARITHMETIC.

FRANCE, one of the principal countries of Europe, having an area of 204,090 sq. m., and a population, according to the census of 1872, of 36,102,921. Formerly France had immense possessions in America, far exceeding those of Great Britain; but of these she, at present, retains but a very small part. During the present century, however, French rule has been extended over considerable territories in northern Africa, Farther India, and the insular world in the Pacific. The total area of the French colonies and dependencies, inclusive of Algeria, was estimated, in 1875, at about 373,000 sq. m., having a population of about 6,600,000. Including its colonies and dependencies, France occupied, in 1876, the fifth rank among the nations of the earth in regard to population, and the twelfth in point of territorial extent. The people of France proper are remarkably homogeneous in language and religion. Almost the entire population speak the French language, and more than 98 per cent are actually or nominally connected with the Catholic Church. Thus France is the chief representative, among the countries of the earth, of what is sometimes called the Latin race: and its language is foremost among Romanic languages, as its people are chief among the supporters of the Catholic Church.—The present territory of France, in the earliest historic times, was inhabited by the Gauls, a Celtic tribe. The country became a Roman province 58—51 B. C. During the 5th century A. D., it was conquered by the Franks, a German tribe, who built up an empire, which, under Charlemagne, reached its greatest territorial extent, embracing, besides modern France, a large portion of Germany and Italy. With the division of this empire, in 843, by the treaty of Verdun, begins the separate history of France and Germany. The kingdom of France, slowly consolidating itself by the absorption of the territories of numerous petty princes, attained the summit of its glory under Louis XIV. (1643—1715); but, tired at last of the long-continued oppression of the kings and the privileged classes, the people, in 1789, rose in a mighty insurrection, proclaimed the republic in 1792, and executed King Louis XVI. in 1793. The republic was overthrown by Napoleon I., who made himself emperor of France, in 1804, and established the greatest empire of modern times, subjecting to his direct or indirect rule all Europe except England and Russia. With his final dethronement, in 1815, this empire came to an end; and the re-instated Bourbons only ruled within the former limits of the kingdom of France. In 1848, a second republic was proclaimed, and Louis Napoleon was elected president, who, in 1852, proclaimed himself emperor under the title of Napoleon III. His defeat, in 1870, by the united German states led to the deposition of his dynasty and the proclamation of the third French republic.

Educational History.—Little is known of the state of education among the Celts of ancient Gaul; but Cæsar says of the Druids that they "held a great many discourses about the stars and their motions, about the extent of the universe and of various countries, about the nature of things, and the power of the immortal gods," and "transmitted their opinions and knowledge to the young." In the flourishing Greek colony at Marseilles, a school was established long before the time of Cæsar, which attracted a large number of pupils. Under the rule of the Romans, the cause of education made considerable progress. Lyons, Narbonne, Bordeaux, Toulouse, Arles, Besançon, Treves, and other centers of population, had both public and private schools, in which the Greek and Roman classics were read. The teachers of these schools enjoyed many privileges. They drew their salaries from the imperial treasury, and, before entering upon their office, had to undergo a public competitive examination. The scholars were divided into three classes: *externi*, living outside the institution, *convictores*, boarders, and *alimentarii*, those supported in the institution by public or private stipends. When, in the course of the 5th century, the education and civilization of pagan Rome gradually decayed, and finally disappeared before the advance of Christianity, Christian schools sprung up in connection with many monasteries, and France soon took a prominent part in the establishment of cathedral, collegiate, and convent schools. Among the cathedral schools, those at Arles, Bourges, Clermont, Le Mans, Paris, Poitiers, and Vienne, and among the convent schools, those of Luxence, and of St. Vaudville, in Normandy, were especially famous. During the 7th century, dense ignorance prevailed; but Charlemagne infused new life into the existing schools, and founded many new ones. Through the efforts of Alcuin, the court school (*schola palatina*), in which the sons of nobles were educated, became a model school for all ecclesiastical institutions. The reign of Louis le Débonnaire was not favorable to this school, but its prosperity revived under Charles the Bald, when it counted John Scotus Erigena among its teachers. After the death of Charles the Bald, the efficiency of the school departed for ever, and theological seminaries and convent schools were the only institutions in which an education could be obtained. The feudal wars which followed entirely prostrated all educational institutions. In the 11th and 12th centuries, the reformatory movements among the clergy favorably reacted upon education, and many of the clerical schools regained new luster. Paris became the great center of learning, and many were the distinguished teachers who added to the reputation of the Parisian schools. The most illustrious among all the French teachers of this period was Abélard (q. v.). Besides the episcopal schools of Notre Dame and Geneviève, in Paris, those of Reims and Chartres, and the convent school of Bec, in Normandy, were especially famous. In 1200, a royal decree which exempted the teachers of Paris, the students and their servants, from the jurisdiction of the city, prepared the way for a corporate organization of teachers and students, and, consequently, for the establishment of the Paris university, which, after animated controversies with the chancellor of the chapter of Notre Dame, in 1203, had its independence recognized and permanently secured by Papal privileges. The reputation and influence of the new university increased with marvelous rapidity, and attracted thousands of students from all parts of Europe. In 1233, another university was established at Toulouse, which received from Gregory IX. privileges equal to those of Paris. A third university was founded at Montpellier, where, probably, the scholarship of the Arabian schools in the neighboring Spain were exerting a favorable influence. In the natural course of development, these institutions became the only seats of the higher studies, while cathedral and convent schools remained almost exclusively training schools of candidates for the priesthood. The controversy of the university of Paris with the powerful orders of the Franciscans and Dominicans led to the organization of the theological faculty, which was gradually succeeded by the division of the entire university into four faculties. As the example of Paris was followed in most countries of Europe, the establishment of distinct faculties marks a new departure in the history of the European universities. (See UNIVERSITY.) Another educational movement of great importance was begun in Paris by the establishment of colleges in connection with the university. These institutions were, at first, intended to give to students from the French provinces, and from foreign countries, lodging and board, and some of them were founded even before the establishment of the university. But their character as preparatory and auxiliary schools was only developed in connection with the universities. Among the oldest and most renowned Parisian colleges, were those of St. Thomas, the Danish

College, the College of the *Dix-huit*, the Greek College (1206), and the Sorbonne (1253). Besides these colleges, which, however, were numerous only in Paris, the universities conducted also independent middle schools to meet the growing demand of large classes of the population for instruction. Paris, at this time, had even a system of parochial or elementary schools, under the Grand Chanter, or master of singing. In 1380, the male and female teachers of Paris held a general meeting, from the proceedings of which it appears that there were, at that time, in Paris at least 41 male, and 22 female teachers. Of the former, many had the degree of *bachelier* or *maître-ès-arts*. In the course of the 14th and 15th centuries, the desire for knowledge and education became quite general among the nobility and the population of the towns. The number of students rapidly increased in all parts of the country. New universities arose at Orleans, Cahors, Perpignan, Angers, Aix, Caen, Poitiers, Valence, Nantes, Bourges, and Bordeaux. The kings recognized their importance, conferred upon them many favors, and by gradually withdrawing them from papal and placing them under royal jurisdiction, substantially changed their character. Strict conformity with the teaching of the church was no longer, to the same degree as before, the highest aim kept in view, and a more exalted position was accorded to the foremost representatives of the high schools in both church and state. Among the grandest triumphs of the university was the leading part which it was called upon to take in the termination of the papal schism. The transfer of the lectures from the halls of the university to the colleges was an innovation which has not proved conducive to the progress of education. By making the colleges the centers of university instruction, instead of preparatory and auxiliary schools, it retarded the sharp distinction between secondary and superior instruction, which has greatly promoted the educational development of other European countries. The ecclesiastical seminaries and convent schools greatly suffered, toward the close of the middle ages, from the disorders prevailing in the church; but the *petites écoles*, or small Latin schools, which were conducted by clergymen in all the larger towns, attained a high degree of prosperity. Under Louis XI. (1461—1483), the subjection of all the non-clerical schools to the supreme jurisdiction of the state government was completed. In 1529, Francis I. founded the *Collége de France*, a school for the study of the humanities, which were too much neglected by the university. The new school flourished in spite of all opposition, and attained a very honorable position among the high schools of France. The university, on the other hand, lost, to a great extent, its former influence and prestige, while immorality made alarming progress among the students, especially between 1548 and 1558. The government took occasion, from the deplorable condition of the university, to curtail its privileges. The rector, instead of being the head of an independent organization, became an officer of the king. After the conversion of the universities into state institutions had been completed, the government deemed it expedient to extend their educational influence, and, to that end, conferred upon them the exclusive privilege of preparing students for the academic degrees and for the state examinations. The powerful competition which existed between the schools of the Jesuits and the universities, was an efficient spur for the latter, but, when Louis XIV. took the Jesuits under his special protection, their influence upon the educational institutions of the country became, for a time, all-powerful. Another religious order, the Oratorians, were active and zealous in the management of town schools, while primary education, in the rural districts, appears to have been, on the whole, in a very unsatisfactory condition. After the example of the Jesuits and Oratorians, a number of other religious orders devoted their chief or even exclusive attention to teaching schools of different grades; and no other country of the world showed itself so prolific in the formation of new congregations of school brothers and school sisters as France. (See Roman Catholic Church.) The philosophy of Descartes emancipated the French high schools to a considerable extent from the rule of scholasticism, which until then had been generally prevalent, and through the *petites écoles* of Port Royal, its influence reached even the primary schools. The *petites écoles* of Port Royal were not of long duration, but their school books were continued in use for a long time. Rollin, the celebrated Rector of the Paris University, followed closely in the footsteps of Port Royal, and France is indebted to him for several important reforms. The rigid centralization which, under Louis XIV., began to be established in all departments of public life, was also applied to the educational institutions. A closer connection was established among the colleges, a general course of studies was drawn up, new studies were introduced, and the training of teachers was improved. Many distinguished educators found, however, in the educational methods of the French schools too much of a mechanical formalism; and Rousseau violently attacked the pedagogy of his time as lifeless and weak, perverse and inefficient.—The influence of the great revolution of 1789 showed itself first in an attempt to introduce the principles of the revolution into all the schools of the country. Several plans were tried, but without satisfactory results. Talleyrand, in 1791, submitted an elaborate and comprehensive plan of national education, but the Constituent Assembly confined itself to sanctioning two principles: (1) public instruction shall be established common to every citizen, and gratuitous in respect to those branches which are necessary to all, and its establishments will be gradually arranged in accordance with the divisions of the kingdom; and (2) national holidays will be appointed. In 1792, the philosopher Condorcet submitted another elaborate plan to the

Legislative Assembly, which, however, was likewise prevented, by the gravity of political events, from completing the reconstruction of public education. In September of the same year, the Convention pronounced the abolition of all the colleges, and of the faculties, turning instruction over to private enterprise. As the consequences of this measure proved to be very injurious, the Convention founded, in 1794, the *École Centrale*, subsequently named *École Polytechnique;* and, in 1795, the *École Normale*, which was abandoned after three months, and one hundred central schools, a kind of real gymnasia, which likewise did not prove a success. A general national school law was likewise proclaimed in 1795, but it never took effect. Real progress in reconstruction was made by the Consulate, which, in 1800, established four large colleges called *prytaneums*, at Paris, Versailles, Fontainebleau, and St. Germain, to which were afterwards added one at Brussels, and one at Compiègne, the latter for mechanical arts and navigation. A general revival of education began in 1802, and in 1805, France again possessed 30 lyceums and 250 communal colleges. At the same time, the government restricted the absolute freedom of teaching, and subjected the entire educational system to a strict supervision. In 1808, Napoleon abolished the old provincial institutions, and united all the teaching forces of the country into one educational corporation, which he called *Université de France*. He comprised in this one organization all the educational institutions, from the primary school to the university. The chief peculiarity of this organization was that the university alone possessed the right of teaching, and that in this way every body was forced to receive its teaching. The supreme direction was placed in the hands of a Grand Master, and a Council of the University. In 1815, after the overthrow of the Empire, this grand master and the council of the university were abolished, and their powers were transferred to a *royal commission* acting under the authority of the minister of the interior. The *commission* was, in 1820, changed into a *royal council of public instruction*, the president of which again received, in 1822, the title of Grand Master of the University, and in 1824, that of Minister of Public Instruction and Ecclesiastical Affairs. The *Charte* of 1830 promised a new educational law, as well as a law on freedom of instruction; these provisions were, however, only carried out in part. In 1833, a new law on primary instruction appeared, which introduced important reforms. Mr. Guizot, the minister of public instruction, addressed, in connection with this law, a circular letter to the primary teachers, which was translated into all the languages of Europe, and gained for its author hosts of warm admirers. The bishops regarded the existing school legislation, and especially the privileges of the university, as detrimental to the interests of the Catholic Church, and accordingly began a vigorous agitation for freedom of instruction. In 1845, the minister of public instruction, Salvandy, consented to a change in the composition of the Council of Studies, by appointing, in addition to the life members of which it was formerly composed, some members for a term of years. In April 1847, Salvandy drew up this draft of a new law which substituted for the Council of the University a Superior Council of Public Instruction, which was to contain, beside the members of the University, representatives of the state government, of the bishops, of the Protestant consistories, of the Jewish and of the private schools. Only a few provisions of this law had been carried into practice, when the revolution of 1848 interrupted its further execution. In 1850, a new law was passed which substantially granted the demands of the Catholic party as to the composition of the superior council. This body was henceforth to be composed of archbishops, bishops, Protestant clergymen, councilors of state, and members of the Institute of France, all elected by the free suffrage of their colleagues. Under the second empire, this mode of election was abolished; and the government claimed the right of appointing all the members. In making the appointments, the government showed itself, however, anxious to give no offense to the church. By the law of 1854, sixteen academies were established, to which one was added afterward. These academies were subdivisions of the University, and comprised all the institutions of a district, faculties, lyceums, colleges, and primary schools. For each academy a council was appointed, composed of the inspectors, the deans of the faculties, a bishop, two clergymen, two magistrates, and two other state officers of the academic district, the seven last being appointed by the ministry. After the overthrow of the second empire, Jules Simon, one of the most distinguished educational writers of France, became minister of public instruction. The chief aim of the new minister was to make primary instruction as general as possible, and to raise the French schools of all grades to a level with the best in any country of the world. By a law of 1873, the council of public instruction was again made elective. As the majority of the legislative assembly were favorable to the demands of the Church, superior instruction was, in 1875, so regulated as to make it possible for the Catholic Church to establish free Catholic universities. In 1876, the chamber of deputies passed a bill to restore to the university the sole right of conferring degrees, but it was not concurred in by the senate.

Primary Instruction.—The policy of establishing public primary schools under the control of the state, in which all children might receive instruction, was not incorporated into the legislation of France until after the law of June 28., 1833, under the administration of M. Guizot as minister of public instruction. The attempts made during the revolutionary period, and under the empire, to provide a national system of instruction, had lasting results only for secondary and superior instruction, but not for primary schools. One of the great scholars of that time,

M. Cuvier, made an extensive tour through Holland, Germany, and Italy, to study the educational systems of those countries; and his report, published in 1811, which specially commended the elementary schools of Holland for their sound practical organization, excited a lively interest, and led to regretful comparisons, but not to any real improvement. M. Guizot, in a brief review of the educational history of France, commends the heads of the educational department under the Restoration for their good intentions; but of the educational condition of the country, from 1814 to 1830, he can only state: "It cannot be said that elementary instruction did not suffer from political attacks; but still it did not completely perish in the dangerous contact." The government of 1830 proved itself, from its commencement, highly favorable to elementary instruction. The executive government and the chambers vied with each other in the promotion of this object. In 1831, M. Cousin, one of the ablest scholars of France, was sent to Germany to study the educational system of that country; and, in the report published on his return, he carefully discussed all questions which the new law on primary education, then in preparation, was to settle. M. Guizot, who was appointed minister of public instruction, in 1832, was supported in the preparation of the new law, by a number of eminent men, among whom, besides M. Cousin, may be especially mentioned M. Villemain, M. Thénard, and M. Rendu, on account of their reputation as scholars or educational writers. The conscientious care with which the law of 1833 had been prepared, is now recognized on all sides, as is also the beneficent influence which it has exerted upon the progress of primary education. In 1826, there were 14,009 communities which had no elementary schools; and, in 1832, there were in Paris 30,000, among the 70,000 children of school age, who received no instruction. Four years after the promulgation of the law of 1837, as many as 29,613, of 35,280 communities in the country, had their own school-houses. On the basis of the new law, the primary-school system was more fully developed by the law of March 15., 1850, the organic decree of March 9., 1852, and the law of Jan. 14., 1854. These laws supplement each other, and contain the chief principles which are still in force. The primary schools of each commune are under a local board, consisting of the mayor, the parish priest, and a few citizens elected by the officers of the *arrondissement*. This board superintends both public and private primary schools. It cannot appoint teachers; but, in case of a vacancy, it can decide whether a lay teacher or a member of a religious congregation shall be appointed. In urgent cases, the mayor has the power to remove teachers, but he must give immediate notice to the *inspecteur primaire*. The inspectors are generally experienced teachers; and it is their duty to visit and examine the schools, and to attend the examinations of candidates. They make annual reports to the inspector of the academy. The highest school authorities in a department are the rector of the academy and the prefect. The former supervises the instruction, has charge of the normal schools and of the examinations of teachers, and has all this done through his inspectors, of whom he has one for every department in the academic district. He makes an annual report on the condition of the primary schools in his district, both public and private, to the minister of education. The prefect has charge of the entire external administration of the schools. He sees to the erection of the school-houses, has charge of the finances, can appoint, remove, or reprimand teachers, and is assisted in these duties by the inspector of the academy of his department. Four *inspecteurs généraux* are appointed by the supreme council of public instruction, to superintend the primary institutions of the entire country. Besides these, there are six *inspecteurs généraux* for the lyceums and colleges, and eight for the faculties. Any French citizen, twenty years of age or over, may give primary instruction in public or private schools, provided he has the necessary certificate. The salaries of the French teachers are very small, though they have been raised seven times since 1833. The lowest class of teachers, in 1833, received 200 francs; 250 francs, in 1844; 275, in 1847; 454, in 1849; and 600, in 1867. According to a law of July 19., 1875, the salaries of the teachers are regulated as follows: Male teachers are divided into four classes, according to their term of service, and the size of the cities. The first class receive 1,200 francs; the second, 1,100; the third, 1,000; and the fourth, 900. Female teachers are divided into three classes, and receive 900, 800, and 700 francs, respectively. The course of studies comprises religion, reading, writing, grammar, arithmetic, the elements of French history, and geography. Teachers may add to these studies the elements of natural history, natural philosophy, agriculture, hygiene, singing, and gymnastics. Only in recent years have reforms been introduced in the methods of teaching. As late as 1843, there were still 5,484 primary schools pursuing the so-called *individual method* (*mode individuel*), each child being called to the desk, and instructed separately. This method, as well as the monitorial system, which found many admirers in France, is now abolished. The method most generally employed at the present time, is the simultaneous method, by which the children are divided into three divisions, all the pupils of one division receiving instruction at once. Those who are not able to take part in any of the three divisions, are placed under the charge of the best pupil in the school. The total number of schools, in 1875, was 53,350, with 3,477,542 pupils, of whom 1,366,360 were free scholars. Of the schools, 19,044 were for boys, and 6,399, for girls, besides which there were 16,570 mixed schools. The number of pupils in the lay schools was 2,340,344, of whom 704,028 were free scholars. Of the convent schools, 1,970 were for boys, 8,322, for girls, and 1,099 were mixed schools. The number of pupils in the convent schools, was 1,137,198, of whom 662,352 were free scholars. Infant asylums and schools were first established in 1808, but met with little success. In 1827, they began to increase and flourish, until, in 1860, there were 3,517, of which, 1,088 were private. The public asylums were attended by 344,381 children; the private, by 74,380; in all, 418,761. Of these, 307,556 pay no fees; and 2,608 asylums, private and public, with 323,460 children, were directed by religious orders. The instruction given, consists of the first principles of religion, of reading, mental arithmetic, and linear drawing; manual occupations, and other exercises appropriate to the age of the pupils; the singing of hymns, and moral and physical training. The decree of 1864 placed them under the patronage of the empress, and created, in the ministry of education, a central committee of patronage, for the increase and superintendence of these schools In every academy, there is an inspectress, paid by the government, to inspect all the public and private asylums. Besides, there are two delegates connected with the central committee, who go wherever they are called.—As soon as primary instruction had made some progress in France, it was found necessary to open schools for adults, in order to complete the instruction of some, and to begin that of others. The first school for adults was opened by M. Delakaye in Paris, in 1820. An evening school was opened by the Christian Brothers, in 1830. In 1833, M. Guizot, minister of public instruction, alluded to them in an order of the department; and, in 1835, they were formally recognized and aided by the government, but were not incorporated into the public-school system of the country until 1867. During the winter of 1865—6, there were 24,686 courses for adults, in 22,947 communes. They were attended by 42,567 women and 552,939 men.—The first normal school in France was founded in 1810, in Strasbourg. Under Napoleon I. and the Restoration, they greatly flourished; but soon, objections were raised against them, and, after the promulgation of the law of 1850, its authors considered normal schools not only unnecessary, but even dangerous. It was, consequently, proposed to abandon the normal schools, and to recruit the ranks of the teachers from a certain number of pupil-teachers, who were to receive their training in the best communal schools. This plan, however, proved a failure, and the pupil-teacher schools were gradually abandoned, and normal schools again came into favor. Their number, in 1875, was 81, of which that of Nancy is considered the best. Recently, efforts have been made to connect a library with every school, particularly in the country. The system was first organized by a decree of M. Rouland, in 1862. The books, which are of two classes,—classics, reading-books, and arithmetics, and books of general reading—are the property of the commune, and are placed under the charge of the teachers. France (exclusive of the department of the Seine), in 1875, had 15,623 libraries connected with schools, comprising 1,474,637 volumes. The number of books loaned, in 1873, was 925,358.

Secondary Instruction.—Secondary instruction is imparted in the lyceums and communal colleges (*colléges communaux*). The lyceums are composed of eight classes, and correspond to the German gymnasia. Classes 8 and 7 compose the elementary division; 6, 5, and 4, the grammar division; and 3, 2, 1b, and 1a, the superior division, to which is added, in some lyceums, a mathematical school. The studies taught in the elementary division are French, Latin, Biblical history, geography, arithmetic, linear drawing, and penmanship. In the grammar division, Greek is added to the above studies. In the superior division, the system of bifurcation has been introduced, so that it comprises two courses, —the literary and the scientific. The studies of the literary course are Latin, Greek, geometry and stereometry, natural philosophy, chemistry, natural history, and logic. The scientific course comprises arithmetic, algebra, geometry, trigonometry, natural history, natural philosophy, chemistry, and plane and linear drawing. Common to both are the French language, history, geography, and German or English. Most of the lyceums are also boarding-schools. The *censeur* is the head of the boarding-school. Corporal punishment is not allowed, and reproofs are required to be administered without harshness. The communal colleges were established in 1802. They are founded and sustained by the towns, with the approbation of the government. Most of them have a boarding-school attached. Some of them comprise the lowest classes of the lyceums; others, the lowest and middle classes; and still others, besides these, one or two of the higher classes. In addition to these public schools, there are many private secondary institutions (*établissements libres*), partly of a classical, and partly of a realistic, or scientific, character. Included in this class of institutions are the so called *petits séminaires*, or the *écoles secondaires ecclésiastiques* (ecclesiastical institutions), which are superintended and conducted by the bishops, and, in many respects, resemble the lyceums. The number of secondary schools of each class, with the number of students in each, as given by Brachelli (*Die Staaten Europa's*, 1876), is as follows:

	Schools.	Students.
Lyceums (1872)..............	80	36,756
Communal colleges (1872)....	244	32,744
Private institutions (1865).....	935	74,585
Total.............	1,259	144,085

A superior normal school for the education of teachers of secondary schools has been established in Paris. It is composed of two departments, a literary and a scientific, each comprising a three years' course.

Superior Instruction.—France has, at present, five classes of faculties; namely, for theology, law, medicine, mathematics and natural science (*facultés de sciences*), and literature or philosophical, historical, and philological science *(faculté des lettres)*. These faculties, which are state institutions, are not, as in other countries, united into complete universities, but each is an isolated and independent institution. Among the schools of superior instruction, are also counted the high schools for pharmacy, and the schools for medicine and pharmacy. The organization of medical faculties was begun in 1794; of law faculties, in 1804; and the others, in 1808. There were, in 1876, six faculties of theology (Paris, Bordeaux, Lyons, Aix, Rouen, and Montauban, the 5 former being Catholic, the latter Reformed); 12 for law (Paris, Bordeaux, Lyons, Nancy, Aix, Caen, Dijon, Grenoble, Poitiers, Rennes, Toulouse, and Douai); 6 for medicine (Paris, Bordeaux, Lyons, Nancy, Montpellier, and Lille); 15 for science (Paris, Bordeaux, Lyons, Nancy, Caen, Dijon, Grenoble, Poitiers, Rennes, Toulouse, Montpellier, Clermont, Besançon, Lille, and Marseilles); 15 for *lettres* (Paris, Bordeaux, Lyons, Nancy, Aix, Caen, Dijon, Grenoble, Poitiers, Rennes, Toulouse, Montpellier, Douai, Clermont, and Besançon); 3 higher schools for pharmacy (Paris, Nancy, and Montpellier); and 2 higher schools for medicine and pharmacy. The medical faculties at Bordeaux, Lyons, and Lille are also intended for pharmacy. Inclusive of preparatory schools for medicine and pharmacy, and 4 preparatory schools for instruction in science, these institutions for superior instruction, were, in 1872, attended by 14,572 students; and the aggregate number of professors and teachers was 421.—The law of July 26., 1875, authorized the establishment, by private citizens or associations, of free institutions for higher instruction (free faculties), which, if three of them are united, may assume the name of free universities. At the beginning of 1876, the bishops of France founded three *free Catholic universities*, at Paris, Angers, and Lyons. — The *Collége de France*, which provides for lectures on many of the university studies, and the Practical School for Higher Studies, which, in five different sections, prepares its students for the higher study of mathematics, physics, chemistry, natural history, the historical sciences, and philology, are also institutions of this grade.

Special and Professional Instruction. — The Polytechnic School, at Paris, is an institution having a military organization, and prepares its pupils for the higher technical institutions, both military and civil. The latter class comprises the *École centrale des arts et manufactures*, for the education of civil engineers, and of directors of glass-works and factories, the *École des ponts et chaussées*, for the education of road engineers, and the *Conservatoire des arts et métiers*, all in Paris. The Polytechnic School, in 1873, had 19 professors and teachers, 20 assistants, and 426 pupils. Roman Catholic theology is taught in the diocesan seminaries, which are established in the principal town of every French diocese. The numerous religious orders for males have generally theological schools of their own for the instruction of their novices. The Lutheran Church has a seminary at Paris; and, in the same city, there is a Free Theological School, founded by the Free Evangelical Church. The *École des chartes*, at Paris, educates paleographists and archivists. For technical instruction, there are 12 *écoles professionnelles*, 3 *écoles des arts et métiers*, at Aix, Angers, and Chalons sur Marne; schools for watch-makers, at Cluses, in Upper Savoy, and at Besançon, a school for manufacturers of tobacco, and a higher commercial school, at Paris, many lower commercial schools, 42 hydrographic schools for educating seamen for the mercantile marine, and many other schools and courses of study. Agriculture is taught in 3 high schools, at Grignon, near Versailles, Grandjouan, in Loire-Inférieure, and Montpellier, and in 43 *fermier-écoles*, or agricultural schools of a lower grade; besides these, there is a school of forestry at Nancy. The principal mining school is the National School of Mines, at Paris, besides which there are mining schools at St. Étienne and Alais. For instruction in the fine arts, there are 3 national schools of fine arts,— at Paris, Lyons, and Dijon, the National Conservatory of Music and Declamation, at Paris, and many other institutions. Military instruction is imparted in the Staff-school, at Paris, the School of Artillery and Military Engineering, formerly at Metz, now at Fontainebleau, the Special Military School at St. Cyr, near Versailles, the schools of artillery at Valence and Nimes, the school of infantry at the Camp d'Avor, the naval school at Brest, the school of military medicine and pharmacy in Paris, the school of cavalry at Saumur, the Military Pyrotechnic School, at Bourges, the Normal School for Gymnastics, at Vincennes, the Practical School of Maritime Engineering, at Cherbourg.—There are 314 orphan asylums, in which 15,745 orphans were educated. The *salles d'asiles*, of which there were 2,950 (2,068 public and 882 private), were attended by 307,000 children, and had an annual budget of about 2,000,000 francs. Moreover, 673 *ouvroirs* give almost gratuitously an industrial education to 1,277 boys and 18,695 girls.—See Schmid, *Encyclopädie*, art. *Frankreich* (by Dr. Bücheler); Barnard, *National Education*, vol. II.; Théry, *Histoire de l'éducation en France* (Paris, 1858, 2 vols.); Jules Simon, *L'École* (8th edit., 1874); *Annuaire de l'instruction publique* (Paris). Among the school journals, the *Revue de l'instruction publique* (established in 1842) is regarded as the most important for secondary, and the *Manuel général de l'instruction primaire*, as the foremost for primary instruction. A complete collection of all the laws and regulations which have been issued in France relative to primary instruction from 1789 to 1874 has been published by Gréard, *La législation de l'instruction primaire en France depuis 1789 jusqu'à nos jours* (3 vols., Paris, 1874). The history of primary-school inspection is given in Brouard and Defodon, *Inspection des écoles primaires* (Paris, 1874). A very full account of the primary schoools of Paris and of the *Département de la Seine* is given in Gréard, *l'Instruction primaire à Paris en* 1875 (Paris, 1876).

FRANCISCAN COLLEGE, a Roman Catholic institution at Santa Barbara, Cal., was founded in 1868. It is conducted by the Fathers of the Order of St. Francis. In 1873—4, it had 15 instructors, 75 students, and a library of 2,500 volumes. The Rev. J. J. O'Keefe, O. S. F., is (1876) the president.

FRANCKE, August Hermann, a distinguished German educator whose name is inseparably associated with a cluster of orphan houses and schools at Halle, and with the development of *pietism* as an educational influence, was born at Lübeck, March 22., 1663, and died June 8., 1727. After studying, with great success, theology and the oriental languages, at the universities of Erfurt and Kiel, he fell under the influence of Spener, then court-chaplain at Dresden, and received from him impressions which largely affected the motives and character of his future life. He began his labors as an educator in 1687, by opening an infant school at Hamburg. Realizing the importance and difficulty of teaching children, he resolved to devote himself to the improvement of schools and methods of instruction. The results of his experience he afterwards embodied in a work which he published under the title, *Upon the education of children to piety and christian wisdom.* In 1692, he became professor of the Greek and oriental languages in the university of Halle, and pastor of the Glaucha church. Here he remained till his death, July 8., 1727, highly respected, but removed from the sympathy of his colleagues on account of his religious views. His orphan and charity schools originated in connection with his pastorate. The poor of the parish came to the parsonage on Thursdays for bread. He called them in, taught them religious doctrines, and prayed with them. He formed the children into a class, and hung out a poor-box for contributions. Finding seven florins in the box one morning, he decided to found a permanent school. He soon had to enlarge the school; and circumstances led to the further development of his enterprises, and the organization of other institutions, until there grew up under his charge the Orphan House, the *Pædagogium*, the Burgher School, the Institution for Women, the Bookstore and Printing Office, the Apothecary's Shop (established with a legacy left by one Burgstaller), the Canstein Bible House (the fruit of a gift by the Baron von Canstein for the purpose of printing one hundred thousand copies of the Bible), and the Mission Institute. At the time of Francke's death, these institutions comprised the following: The *Pædagogium*, having 82 scholars and 70 teachers; the Latin school of the Orphan House, 3 inspectors, 32 teachers, 400 scholars and 10 servants; the German Burgher School, 4 inspectors, 98 teachers, 8 female teachers, 1728 boys and girls; the Orphan House, 100 boys, 34 girls, ten overseers; the *Free Table*, 255 students, 360 poor scholars; the household of the Apothecary's Shop and Bookseller's Shop, 53 persons; the Institution for Women and Girls, with 15 persons in the girls' department, 8 in the boarding-house for young women, and 6 widows. In 1876, they included nine schools with three boarding-houses and an orphanage, and with property valued at 313,266 thalers. Since their foundation, 10,000 teachers and more than 200,000 children have been taught in them. In the orphanage proper, more than 7000 orphans have been cared for. These institutions furnished the model after which those of a similar character were founded in other parts of Germany. They were carried on after Francke's death by his son, Gottlieb August Francke.

The governing ideas, in Francke's work and teaching, were trust in God, and the cultivation of the love of God in the heart. He built his institutions upon trust, relied upon prayer as his strong support, and regarded the help and gifts which he received as direct bounties from the hand of the Almighty. He regarded piety as the chief thing needful; without it, all knowledge, wisdom, and worldly culture were more harmful than useful. He taught that, in bringing up children, the teacher should first look to the improvement of the heart and the removal of faults. While paying due regard to the peculiarities of the child's nature, he should seek to banish whatever interferes with the higher development. The inculcation of godliness was likewise Francke's predominant object in discipline. On this subject, he observed, (1) that system must be followed in discipline, and (2) that chastisement must be administered not in anger, but in love. The schools, in all their departments, were characterized by the prevalence of religious zeal. Prayer was faithfully observed in what was done outside the school as well as within it. The Scriptures and religion received precedence in arranging the courses of instruction. With all this, the ordinary studies had their allotted place in each school according to its grade. The course of the higher Latin school included reading, writing, arithmetic, Greek (chiefly of the New Testament), Hebrew, mathematics, history, geography, music, physics, anatomy, oratory, and logic. The *Pædagogium* had attached to it a botanical garden, a cabinet of natural history, philosophical apparatus, a laboratory, conveniences for anatomical dissections, turning-lathes, and glass-cutting machinery. The evidences of Christianity, Latin, Greek, Hebrew, and French were taught in it. The system of classification in the schools allowed the pupils to be graded according to their advancement in particular studies, so as to occupy different ranks in the several classes. The number of regular teachers employed was relatively small; because, for the most part, the teaching was done by selected pupils. The teachers lived with the scholars, and Francke himself exercised a constant supervision over all. Besides Zinzendorf, Francke's best known pupils were the two Freylinghausens; namely, John Anastasius, Francke's son-in-law, and his son, Gottlieb Anastasius; J. G. Knapp; Joachim Lange; Jacob Rambach; H. Freyer; G. Sarganeck; Johann Julius Hecker, who founded the famous Berlin real school; and Anton Büsching. Francke is regarded by some as the greatest practical educator that ever lived, and even those who are opposed to the religious basis of his educational theories do not hesitate to hold him up as a model for all time. He was the author of the orphan and charity schools of Protestant Germany; and his ideas on superintendence, inspection, and examination exerted great influence upon the development of the public-school system in Germany. The flourishing institutions of the Moravians (q. v.), whose founder, Count Zinzendorf, had been educated by Francke, were for a long time conducted in accordance with Francke's principles. About 1770, the institutions began to decline; but the entrance of A. H. Niemeyer, a great-grandson of Francke, into the directory, ushered in a new period of prosperity, which still (1876) continues. — See GUERICKE, *A. H. Francke* (Halle, 1827); ECKSTEIN, *Die Gestaltung der Volksschule durch den Francke-schen Pietismus* (1867). (See also GERMANY.)

FRANKLIN COLLEGE, at Franklin, Ind., is under the control of the Baptists. In 1834, a number of Baptist ministers and laymen met at Indianapolis to form an education society. Bids were advertised for a site on which to plant a school. The institution was first called the Baptist Manual Labor Institute. About the year 1844, the name was changed to Franklin College, a college charter was secured, and college instruction begun. This name it has ever since retained, although it has had one suspension of five years, and another of as many months. The present organization dates from 1871. The college has two large brick edifices, a campus of 12 acres, a dwelling-house, and philosophical and chemical apparatus, the whole valued at $40,000. The endowment amounts to $85,000. The libraries connected with the institution contain about 3,000 volumes. It has both a preparatory and a collegiate department, with a classical and a scientific course. Facilities are offered for instruction in music and painting. Both sexes are admitted. The cost of tuition in the college is $28 per year; in the preparatory department, $23 per year. In 1875—6, there were 6 instructors and 99 students, of whom 18 were in the collegiate department. The presidents have been the Rev. G. C. Chandler, D. D., Silas Bailey, D. D., and the Rev. W. T. Stott, D. D., the present incumbent (1876).

FRANKLIN COLLEGE, at New Athens, Harrison Co., Ohio, was chartered in 1825. It grew out of the Alma Academy, which had been conducted for some time under the auspices of the Rev. John Walker, a Presbyterian minister. The college was early involved in the anti-slavery controversy, and, in 1840, became distinctively an anti-slavery institution. It comprises a preparatory and a collegiate department, the latter having a classical and a scientific course. Both sexes are admitted. The library contains 3,000 volumes. In 1873—4, there were 8 instructors and 148 students (27 collegiate and 121 unclassified). In 1875, there were 319 *alumni*. The presidents of the college have been as follows: The Rev. Dr. Wm. McMillan, 1825—32; the Rev. Richard Campbell, 1832—5; the Rev. Johnson Welsh, 1835—6; the Rev. Dr. Joseph Smith, 1837—8; the Rev. Jacob Coon, *pro tem.*, 1838—9; the Rev. Mr. Burnett, 1839—40; the Rev. Edwin H. Nevin, 1840—5; the Rev. Dr. Alexander D. Clark, 1845—61; the Rev. R. G. Campbell, 1867—71; and A. F. Ross, LL. D., the present incumbent (1876), appointed in 1871. During the civil war, there was no regular president.

FRANKLIN AND MARSHALL COLLEGE, at Lancaster, Pa., is under the control of the Reformed (German) Church. This institution was founded in 1853, by the consolidation of two older institutions, — Franklin College, established in 1787, at Lancaster, mainly through the exertions of Benjamin Franklin, who also contributed liberally to its endowment, and Marshall College, founded in 1836, and translated for the purpose of this union from its former location at Mercersburg, Franklin Co. It has an endowment fund of a little over $100,000. The cost of tuition is $39 per annum, but most of the students receive tuition free on standing scholarships. The curriculum is the ordinary four years' classical course of American colleges. There are no optional courses of study, in which the student is allowed to choose for himself what he shall learn. The college receives no *irregular* students, as they are called, and has no provisional or mixed classes. The college and society libraries contain about 11,000 volumes. Connected with the college are the Franklin and Marshall Academy and the Theological Seminary of the Reformed Church. The academy is designed as a training school for those who desire to prepare for college, and also to furnish a complete academical course for those who do not propose to take a full collegiate course of study. The full course is six years. The full course in the Theological Seminary is three years. Tuition is free. The library comprises from 7,000 to 8,000 volumes. In 1875—6, there were 12 instructors (college, 7; academy, 2; seminary, 3), and 135 students (college, 67; academy, 36; seminary, 32). The number of *alumni* of Marshall college was 182: of Franklin and Marshall College 358; total 540. The first president of Franklin and Marshall College was the Rev. Emmanuel V. Gerhart, D. D., appointed in 1855. He continued in office till 1866, when he was succeeded by the Rev. John W. Nevin, D. D., LL. D., the present incumbent (1876).

FREDERICK COLLEGE, at Frederick, Md., was organized in 1797. It has a valuable mineralogical cabinet, philosophical and chemical apparatus, and a library of 3,000 volumes. There are three departments: The classical department, including the Latin and Greek languages, also the German, with related subjects; The mathematical and higher English departments; and the elementary department. The cost of tuition in these departments is, respectively, $60, $40, and $25; but there is an extra charge of $20 per annum for German. G. C. Deaver, A. M., is (1876) the president.

FREE SCHOOLS. See PUBLIC SCHOOLS.

FREEDMEN'S SCHOOLS. A proclamation issued by President Lincoln, Jan. 1., 1863, abolished slavery in the United States, and the colored people set free by the proclamation received the name of freedmen. As nearly the whole of this population was illiterate, various charitable and religious organizations of the North began at once to exert themselves to aid in establishing schools and employing teachers for them. On March 3., 1865, an act of Congress was passed establishing a special "Bureau of Refugees, Freedmen, and Abandoned Lands," afterwards known as the "Freedmen's Bureau." It remained in operation until Dec. 31., 1868, when its functions ceased, with the exception of the educational department, which continued until July 1., 1870. After the organization of the Bureau, the schools already existing were taken in charge by it, and in some states were carried on entirely by aid of its fund and under its provisions. A number of benevolent and religious societies continued to co-operate with the Bureau in the establishment of schools, and most of the American churches expressly included the care of the freedmen's schools among the objects of their home missionary societies, or of special Freedmen's Aid Societies or Committees. A general superintendent, appointed by the commissioner of the Bureau, traveled through most of the Southern states, and provided for the establishment and supervision of their schools. The following table gives the number of day and night schools from which regular reports were received by the Bureau during the years stated; besides which there were many Sunday-schools, industrial schools, and day and night schools, that made only occasional reports to the Bureau.

YEAR	Day & Night Schools	Teachers	Pupils	Total number of pupils
1866....	975	1,405	90,778	150,000
1867....	1,839	2,087	111,442	238,342
1868....	1,831	2,295	104,327	241,819
1869....	2,118	2,455	114,522	250,000
1870....	2,039	2,563	114,516	247,333

Of the schools reported in 1870, 1,324 were sustained wholly or partly by freedmen, who owned 592 school buildings; 74 schools, with 8,147 pupils, were high or normal schools. Of the teachers, 1,251 were white, and 1,312 colored. The whole number of schools, of all kinds, was 4,239, with 9,307 teachers; of these, 1,562 were Sunday-schools, with 6,007 teachers and 97,752 pupils, and 61 industrial schools, with 1,750 pupils. The whole amount expended for educational purposes, to Aug. 31., 1871, was $3,711,264, the greater portion of which was for the erection and renting of school buildings. The Freedmen's Bureau also aided in the establishment of a considerable number of schools of a higher grade for the colored population, in some cases co-operating for this purpose with one of the religious denominations. Among the institutions thus founded, were Howard University, Washington, D. C. (unsectarian); Atlanta University, Atlanta, Ga. (unsectarian); Claflin University, Orangeburg, S. C. (Method. Episc.); Straight University, New Orleans, La. (Congregational); Fisk University (Method. Epis.), and Central Tennessee College (unsectarian), both at Nashville, Tenn.; Wayland Seminary (Baptist Theological), Washington, D. C.; and the Hampton Normal and Agricultural Institute, at Hampton, Va. All these institutions still exist (1876).—Since the abolition of the Freedmen's Bureau, efforts for maintaining and enlarging these schools have chiefly been made by the American churches, nearly all of which support churches as well as schools for the benefit of the colored population. The importance of a good education for a population which numbers several millions, and which, although only just emerging from a condition of absolute illiteracy, has been invested with all the rights and duties of citizenship, is now fully recognized by all parties in the country, though there may be considerable difference of opinion as to the best means to reach this aim. (See COLORED SCHOOLS.) None of the American churches has carried on operations in behalf of the freedmen's schools on so large a basis, as the Methodist Episcopal Church. At the anniversary of the Freedmen's Aid Society of the M. E. Church, held in Dec. 1875, it was reported that the total disbursements of that society, during the eight years of its operations, had been $523,000. The receipts of the last financial year (ending May 31., 1875) were $86,000. The Society has aided in the establishment and support of fourteen institutions of a higher grade in the Southern states. It has also aided in the support of many common schools. It is claimed that fifty thousand children have been taught in its day schools, and a still larger number in its Sunday-schools; that more than a hundred ministers, and over a thousand teachers, have been instructed in the institutions it has established and sustained, and that upward of forty thousand children have been taught by persons whom it has trained. Besides receiving this aid from the several American churches, the schools for freedmen have had considerable support from the Peabody fund. (See PEABODY.)

FREEWILL BAPTISTS, a section of Baptists, which commenced in North America in 1780. The name was reproachfully given by their calvinistic brethren to Benjamin Randall and a few other Baptist ministers who gave special prominence to the doctrine of the freedom of the will in the work of salvation. Randall and those who agreed with him accepted the distinctive name, and used it after the separation from their brethren had taken place. At present, they are in opposition to the Regular Baptists chiefly on the Communion question, the Freewill Baptists being Open Communionists. (See BAPTISTS.) A number of churches, conveniently located, unite as an association, and hold a meeting by delegation four times a year, which is called a Quarterly Meeting. Several Quarterly Meetings, similarly situated, unite and meet annually; and this association is called a Yearly Meeting. All the Yearly Meetings send representatives to the General Conference, which meets once in three years. They agree almost wholly in doctrine with the General Baptists in England. In 1841, nearly the whole body of another Baptist denomination, the Free Communion Baptists, chiefly belonging to the state of New York, united with them; while, on the other hand, their congregations in North Carolina left them, and several thousands of Baptists in Kentucky and other Southern states, who agreed with them on doctrinal points, were refused admission to their communion in consequence of the very decided position which the church assumed against slave-holding. More recently, negociations have been begun to bring about a union with the Church of God (q. v.), as the two churches are essentially one in principle; but from a report made to the Freewill Baptist General Conference in 1874, it appears that the Church of God is unwilling to give up its present name. The Freewill Baptists reported, in 1875, 38 yearly meetings, 1,399 churches, 1,185 ordained preachers, and 72,128 members. Of the yearly meetings, one is in British America, and one in India; the others are in the United States. The Free Baptists of New Brunswick and Nova Scotia are in full agreement, though not in organic union, with the Freewill Baptists: the former, in 1875, had 138, the latter, 30 churches. The Freewill Baptists have 21 literary institutions for secondary or higher instruction, six of which are colleges; namely, Hillsdale College, at Hillsdale, Mich. (organized in 1855); Bates College, at Lewiston, Me. (1863); Ridgeville College, Ridgeville, Ind. (1867); West Virginia College, at Flemington, W. Va. (1868); Storer College, at Harper's Ferry, W. Va.; and Wolsey College, at Peach Grove, Tenn. Theological schools are connected with Hillsdale and Bates colleges. The Freewill Baptist Education Society has invested funds to the amount of $45,000, the interest on which is chiefly devoted to sustaining theological instruction in Bates and Hillsdale colleges. It makes liberal provision in aid of young men preparing for the ministry. This denomination, from the beginning of the anti-slavery struggle, maintained an unwavering and strenuous opposition to slavery, and is still doing good service for the freedmen, especially in the Shenandoah and Mississippi valleys. Among the newspapers issued by the denomination, are two Sabbath-school papers, which, by alternating with each other, furnish a weekly issue. Its Sabbath-school work is pursued with much interest and vigor.

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Instruction in French, as in every other foreign language, begins with the acquisition of a correct pronunciation. Next to English, French is the least phonetic of all languages; and, therefore, a large number of rules must be learned before the pupil is able to pronounce ordinary words. It is important that this pronunciation should be learned, partly at least, by means of an imitation of the teacher's pronunciation. Memorizing lessons, before the correct pronunciation has been acquired is positively injurious. The French grammar offers but few peculiarities and difficulties. The absence of case-endings and of many other inflections, and the paucity of simple tenses and of changes in the radical part of irregular verbs, facilitate the reading of a French author at a very early stage of instruction. The chief peculiarities, such as the interrogative and negative form of sentences, ought to be frequently practiced. Attention should be called to the relationship which the Latin and the Norman elements of the English language bear to both English and French. Simple exercises in etymology may greatly facilitate the early acquisition of a sufficient number of words, to enable the pupil to read easy writers without a too frequent use of the dictionary. If French is studied by pupils who possess some knowledge of Latin, this knowledge can be used to great advantage in etymological illustration, and in giving a clear view of the peculiar character of the Romanic languages. The understanding of French authors can be made quite easy for most pupils, who soon find that the majority of the words have equivalents from the same roots in their own language. The reading should, therefore, be rapid and not too much interrupted by grammatical or literary remarks. The aim, at first, should be to make the language familiar to the pupil; as he advances, it will be easy, without any sacrifice of time, to call attention to the rhetorical excellencies of the French classics. Classic prose should precede poetry, and should be read to a much larger extent. The great prose writers of the 17th and 18th centuries have some claims to the privilege of being read first; at all events, they should not be neglected. French literature is exceedingly rich in works suited, in every respect, for beginners; and there is no reason why modern writers should deprive Fénélon's *Télémaque* and Voltaire's *Charles XII* of the deserved popularity which they have so long enjoyed. In selecting modern writers, teachers should exercise the greatest care to avoid all works the contents of which are objectionable. In general, the reading of foreign authors who in a marked manner reflect the national peculiarities of their country, is to be preferred; but whenever there is reason to apprehend that the impressions thus made upon the pupil's mind may weaken his patriotic sentiments, there will be need of the exercise of caution. — There is, generally, too little time in English and American institutions for the study of French literature. In most cases, the time devoted to it may be more profitably spent in improving the pupil's technical knowledge of the language. Of course, advanced pupils should become acquainted with the most celebrated authors as well as a rudimentary outline of the literary history of France; but most of this can best be learned as an introduction to the reading of the standard writers. Good French reading-books, with literary introductions to the different authors, may be used for this purpose, especially in advanced classes, with great advantage. The reading of selections which would make the pupil acquainted with the peculiar style and excellencies of Corneille, Racine, Molière, Boileau, Fénélon, etc. of the age of Louis XIV.; of Voltaire, Rousseau, Montesquieu, Florian, &c., of the philosophical century; of Chateaubriand, Béranger, Lamartine, V. Hugo, G. Sand, Guizot, Thiers, Michelet, &c., of modern times, is preferable to the exclusive reading of one or two entire works of French literature.—When colloquial exercises constitute the chief part of French instruction, and to acquire fluency of speech is the chief aim, care should be exercised that the command of the language thus obtained may give to the pupil something more than a collection of trivial phrases and unmeaning expressions of politeness. Eminent educators have often called attention to the dangerous influence which a knowledge, so exclusively formal and without substance, may exercise upon the pupil's mind.

The first grammar of the French language was written by an English author, Palsgrave (*L'esclarcissement de la langue françoyse*, Lond., 1530; new edit. by Génin, Paris, 1852). It was followed by another grammar likewise for English persons, by Giles du Guez (likewise edited by Génin). The first grammar published in France, by Jacques Dubois (*Sylvii in linguam Gallicam isagoge*, Paris, 1531), was written in the Latin language. Great progress was visible in the works of Robert and Henry Stephens (q. v.). Among the later grammars published by French scholars the most highly valued are those by the Port-Royal writers, Lancelot and Arnauld (1660), de Wailly (1754), Girault-Duvivier (1811), Landais (1836), Bescherelle, Noel and Chapsal, Poitevin, Boniface, Letellier and Larousse. Among the grammatical works on the French language written by foreigners, the works by Mätzner, (*Syntax der neufranzösischen Sprache*, 2 vols. Berlin, 1843—

1845, and *Französische Grammatik*, Berlin, 1856) are especially esteemed by French scholars.—The first noteworthy dictionary of the French language was published by Robert Stephens (*Dictionnaire français-latin*, 1539). It went through many editions, and received additions from several authors, the most prominent of whom was Jean Nicot (1573). The dictionary by Richelet (Geneva, 1680) embraced etymology within its scope, and gave quotations from French authors. The *Dictionnaire universel* by Antoine Furetière (Hague, 1690) was a kind of general encyclopædia. A revision of this work, made by the Jesuits, became celebrated under the name *Dictionnaire de Trévoux* (1704), but was declared by the French Academy a plagiarism. The first edition of the *Dictionnaire de l'Académie Française* appeared in 1698, and was at once accepted by the country as the standard lexical authority. The 6th edition appeared in 1835; supplements to this edition were published by Raymond (1836), Landais (1837), Barré, 1842, and others; a 7th edition, to be completed in 2 vols., was in progress in 1876. It is edited by Patin, with whom de Sacy, Sandeau, C. Doucet, and Mignet are associated. On the basis of the dictionary of the French Academy, numerous smaller works have been constructed, the most noted of which are those by Boiste (1801), Landais, Bescherelle (2 vols., 1851), Poitevin (1854), Dochez (1860), Larousse (1865). The new work by Littré (3 vols., Paris, 1863—73) is regarded as the best of all dictionaries of the French language. A historical dictionary of the French language, on a grand scale, has been begun by the French Academy. The first volume, published in 1858, contains only the articles from A to Abu.—Dictionaries merely etymological have been published by Ménage, Borel, du Fresne, Pongens, Roquefort (1829), Noël and Carpentier 1831), Charrasin (1842), Mazure (1863), Scheler (1862).—The best works on the history of the French language are those by Wey (*Histoire des révolutions du langage en France*, Paris, 1848), Génin (*Des variations du langage français depuis le* 12*me siècle*, Paris, 1845), and Littré (*Histoire de la langue française* 2 vols., Paris, 1863).—The standard works on French synonyms are those by Girard (1736), Beauzée (1769), Roubaud (1785), and Guizot (1809—22).—Complete histories of French literature have been published by Nisard (4 vols. 1846—61), Demogeot (3 vols., 1857), and Géruzez (2 vols., 1852).—In connection with the other Romanic languages, the French has been, grammatically and lexically, treated in the standard works of Diez on these languages. (*Grammatik der romanischen Sprachen*, 3 vols., 1836—42, 4th edit., 1876; and *Etymologisches Wörterbuch der roman. Sprachen*, 1853, 3d edit. 1869, Engl. trans. by Donkin, 1864).

FRIENDS, Society of, commonly called *Quakers*, a religious denomination which was organized in England, in the 17th century, by George Fox. He began his religious reform in 1647, and only a few years later, in 1655, the first of his followers came to America. In 1827, a schism took place in the Philadelphia Yearly Meeting, which afterwards extended to most of the other yearly meetings in America. Both parties claim the exclusive right to the denominational title of the *Religious Society of Friends*. One division is known as Orthodox, a title which they claim as being nearest the original Friends in their religious views; and the other division is called Hicksite, from Elias Hicks, a leading member of that branch; but these disdain that title, and call themselves only Friends, acknowledging no man as their leader. The followers of Hicks do not insist on uniformity of belief in some of the tenets which the Orthodox regard as the fundamental doctrines of Christianity, but desire that every one should be fully persuaded in his own mind. They are, in particular, charged by the Orthodox Friends with holding Socinian views in regard to the doctrines of the Trinity and of Satisfaction. The Friends recognize only a ministry of Divine appointment, and regard it as unchristian to take an oath or to go to war. As they do not have clergymen, they can allow no system of theological training, and are, therefore, entirely without theological schools. The Orthodox Friends have twelve yearly meetings, the oldest of which, that of London, is regarded by the others with respectful affection as the mother of yearly meetings. The number of members in England and Ireland is about 17,000. There are settlements of Friends in France, Germany, Norway, Madagascar, and in several parts of Australasia, all of which make annual reports to the London Yearly Meeting, and acknowledge subordination to it. The membership in the United States is about 60,000; in the entire world, 85,000. The other party (the Hicksites) have six yearly meetings with about 35,000 members. The Orthodox Friends have, in, the United States, four colleges; namely, Haverford College, in Pennsylvania (organized in 1830); Earlham College, at Richmond, Ind. (1859), Whittier College, at Salem, Iowa (1868), and Penn College, at Oskaloosa, Iowa. They also have large boarding-schools, the most noted of which are those of West Town, Pa., Providence, R. I., Union Springs, N. Y., and New Garden, N. C. In England and Ireland, there are also several educational institutions of merit under the care of the society. Considering the small number of Friends in Great Britain and Ireland, the educational advantages of the society are unequaled by any religious community. The Flounders College, at Ackworth near Pontyfract, is the only college belonging to the Friends. It was founded in 1784, has an endowment of £40,000, and is exclusively devoted to the training of young men for teachers in the Friends' educational establishments, or in their families. Ackworth School, also at Ackworth, is the chief public school of the society, and has an endowment of £37,000. All the pupils (about 180 boys and 120 girls) are boarders. Besides Ackworth, the Friends possess public schools at Croydon (endowment £30,000), Sidcot (£15,000), Wigton (£12,000), Rawden, near Leeds (£5,000), Penketh, near Warrington (£4,000), Sibford (£10,000), Ayton, near Darlington (£14,000), Newton, Waterford; Mountmellick (£9,000), Lisburn (£11,000), Brookfield (£8,000). First-day schools (Sunday-schools) are conducted in all the yearly meetings with zeal and efficiency, and North Carolina has taken the lead in the establishment of a normal first-day school. The other branch (the Hicksites) have, in the cities of New York, Philadelphia, Baltimore, and Richmond, Ind., extensive and well-conducted schools, adapted to a high standard of useful and practical education. There are also numerous schools of varied character throughout the yearly meetings. Swarthmore College, near Philadelphia, was organized in 1869, and is intended for three hundred pupils of both sexes.

FROEBEL, Friedrich, a celebrated German educator, and the inventor of the kindergarten system of school instruction, was born in Oberweissbach, Thuringia, April 21., 1782, and died in Marienthal, June 21., 1852. He was the son of a Lutheran clergyman, but had few opportunities for education, leaving home at the early age of 13, to become a forester's apprentice. As such he learned the elements of geometry and surveying, and acquired the means to prepare himself for the university of Jena; but his funds being exhausted, he was compelled to shift for himself in various stations, until, in 1803, he was employed as a teacher in a model school in Frankfort on the Main. To acquaint himself with the details of Pestalozzi's reforms in education, he became his associate in the school at Yverdun, Switzerland, from 1807 to 1810. He then continued his studies at the universities of Göttingen and Berlin; but, in 1813, he took part as a volunteer in Lützow's celebrated campaign against Napoleon I. In the same year he was appointed assistant inspector of the mineralogical museum in Berlin; but he resigned that position in 1816 to found in Griesheim, Thuringia, a school, which he soon after transferred to Keilhau, near Rudolstadt. His system of education, as practiced here for fifteen years, was based on the principle of cultivating the self-activity of the pupil, by connecting manual labor with every study. Not fully satisfied, however, with the results of his experiments, he left his school to the guidance of three devoted and excellent assistants, — Middendorf, Barop, and Langethal, and went to Switzerland, where he hoped to find more support in his reformatory plans. He founded a school first in Willisau, in 1832, and afterwards another in Burgdorf, in 1835, which he again left to be carried on by Middendorf and Langethal, and returned to Germany in order to realize his plan of kindergarten schools. He had become entirely convinced that no thorough educational reform could be effected, without changing the methods of the earliest instruction. The powers of the infant's mind, before they become stunted by neglect, he held, must be harmoniously developed, in an institution specially adapted to prepare these young minds for the ordinary processes of school instruction. In this institution, teachers were also to be trained for the special work of infant education. Such a school he called a *Kindergarten*, that is, a garden for children, partly because it was to be located in a hall within a garden, and, partly, because the children were to be treated like plants, being carefully tended, and aided in the natural development of their powers. His first attempt at a practical realization of this scheme, was made in Blankenburg, Thuringia, in 1840; the second, at the invitation of the Duchess of Meiningen, in Liebenthal, in 1849, in the latter of which places he began the training of young women to be kindergarten teachers. Other kindergartens were opened in several of the German cities—Dresden, Hamburg, etc., previous to Froebel's death, in 1852. Before his death, he had the mortification to find the establishment of state or public kindergartens forbidden by the Prussian Minister Von Raumer, who supposed their founder to be Karl Froebel, his nephew, who was charged with being a democratic agitator and socialist. Like all self-educated persons, Froebel was deficient in logical clearness, especially in writing, when a flood of ideas overwhelmed him; as a practical teacher, he was wonderfully impressive and clear. Awkward in appearance, indifferent to the conventionalities of life, and always filled with one interest, one range of ideas and efforts, he, nevertheless, exerted on all genuine educators who came in contact with him, irrespective of creed, station in life, or party, an almost magical influence. Although a devout Christian and religionist, he was entirely unsectarian; although a revolutionary thinker in most respects, he kept free from all attempts at practical revolution; although a cosmopolitan and lover of mankind, he was an ardent national German; and although in theory he was most uncritical, in speech incoherent and hardly intelligible, his system of methods for the development of the mind is eminently practical, systematic, and effective. The most complete biography of Froebel is that written by A. B. Hanschmann (Eisenach, 1874); shorter ones are found in Wichard Lange's complete edition of Froebel's pedagogical works (3 vols., Berlin, 1862), in Diesterweg's *Rheinische Blätter* (1860), in the journal *Erziehung der Gegenwart* (1874, sq.) by the Baroness Marenholtz-Buelow, and in Aug. Kœhler's *Praxis des Kindergartens* (3 vols., Weimar). An excellent biographical sketch has also been written by Matilda H. Kriege (New York, 1876). (See Kindergarten.)

FURMAN UNIVERSITY, at Greenville, S. C., founded in 1850, is under Baptist control. It has ample buildings beautifully located on a tract of land, of some forty acres. Its endowment was almost wholly lost by the war. The remnant spared has recently been augmented by an addition of $200,000 in bonds bearing 7 per cent interest. Hereafter tuition will be free for 10 years. The university has an educational fund of about $10,000, the interest of which is to aid young men who are preparing for the ministry. It comprises eight schools; namely, Roman literature; Greek language and literature; mathematics and mechanical philosophy; natural philosophy; chemistry and natural history; logic, rhetoric, and the evidences of Christianity; metaphysics; and English literature. Students are allowed entire freedom in the selection of the schools which they desire to attend. The full course for a degree of A. B. extends through four years. The preparatory department was discontinued in 1869, and has been succeeded by the Greenville High School. The theological department was abandoned some years after the organization of the university, in order to make it the germ of the Southern Baptist Theological Institution, which holds its sessions at Greenville, and has 5 professors. The university, in 1874—5, had 5 professors, 54 students, and 79 *alumni*. The Rev. James C. Furman, D. D., has been the presiding officer of the institution since its opening.

FURNITURE, SCHOOL. See School Furniture.

GALESVILLE UNIVERSITY, at Galesville, Wis., chartered in 1859, is under the control of the Methodist Episcopal Church. Both sexes are admitted. It is supported by tuition fees and an endowment of $15,000. It has a library of over 4,000 volumes, a cabinet of natural history, and apparatus for the illustration of natural philosophy, chemistry, and astronomy. It has a preparatory and a collegiate department with a classical and a scientific course, and a course in modern languages and in music. The cost of tuition in the preparatory department is $21 per year, and, in the collegiate department, $27. In 1874—5, there were 7 instructors; and the number of students was as follows: in the collegiate department, 29; in the preparatory, 96; in music, 28; total, deducting repetitions, 135. The Hon. George Gale, LL. D., was the president of the university from 1859 to 1864, when the Rev. Harrison Gilliland, D. D., the present incumbent (1876), was elected.

GALL, Franz Joseph, a German physician and the founder of phrenology, was born at Tiefenbronn, in Baden, March 9., 1758, and died at Montrouge, near Paris, Aug. 22., 1828. The first impulse to his phrenological investigations was given by the observation made by him, when a boy, that all pupils who excelled in committing pieces to memory had prominent eyes. Gradually proceeding in his observations, he thought he perceived in the human head external marks of other intellectual and moral faculties; and, after twenty years of uninterrupted study, he believed that he had discovered about twenty organs of different faculties. In 1796, he began to lecture on his peculiar theory in Vienna; but, in 1802, the Austrian government interdicted his lectures on the ground that they were dangerous to religion. This charge, which has since been often repeated, against the phrenologists, was stoutly denied by Gall, who, on the contrary, contended that training in early youth could overcome a vicious disposition, and that, therefore, a knowledge of phrenology, which revealed better than any other means of observation, the good and bad dispositions of men, was of great importance to every educator. Gall had many followers, the most noted of whom was Spurzheim, the author of *A View of the Elementary Principles of Education* (Edin, 1821), and other important works.

GALLAUDET, Thomas Hopkins, a noted teacher and philanthropist, was born in Philadelphia, Dec. 10., 1787, and died in Hartford, Ct., Sep. 9., 1851. He graduated at Yale College in 1805, entered the theological seminary at Andover, in 1811, and was licensed to preach in 1814; but, becoming interested in the instruction of deaf-mutes, he turned his attention almost entirely to that subject. Soon after, he was appointed superintendent of an institution founded for the purpose at Hartford, and in 1815, visited Europe in its behalf. Finding that the accomplishment of his purpose to enter the London Asylum as a pupil would be delayed, and a similar purpose for the institution at Edinburgh entirely thwarted, he sought an introduction to the abbé Sicard, then in London, and was invited by him to visit Paris, where every facility was afforded him to study the system of deaf-mute instruction there in vogue. In July 1816, he returned to this country with Mr. Laurent Clerc, one of the ablest pupils and assistants of the abbé Sicard, and founded, with a class of seven pupils, the American Asylum at Hartford—the first institution of the kind in this country. After thirteen years' superintendence, he resigned, in 1830, his position as principal, on account of failing health. From that time till his death, in 1851, he gave his attention liberally to all educational and benevolent pursuits, speaking and writing more particularly on female education, and the treatment of the insane. His most important works are, *Child's Book on the Soul, Mother's Primer, Defining Dictionary, Practical Spelling-Book, The Every-Day Christian, Letters of a Father,* and *Public Schools, Public Blessings.*—See Barnard, *American Teachers and Educators;* and *Tribute to Gallaudet* (Hartford, 1852); H. Humphrey, *Life of T. H. Gallaudet; North American Review* for October, 1858.

GAMES are formal methods of sport or diversion, which constitute, in an especial manner and degree, the peculiar life of childhood. Play may be regarded as a part of that spontaneous exercise of the bodily organs of an animal, which promotes its growth and adapts it to its surroundings; and games, as conventionally established modes of play. These games may be more or less in harmony with the natural wants of those who engage in them; but it will be found that the more nearly they agree with these natural wants, the more generally they have prevailed in every period of the history of mankind. Thus modern research has shown that the best games, both of children and of adults, were practiced, with certain variations occasioned by differences of climate, soil, and national character, thousands of years ago. With the progress of civilization, these games undergo certain modifications so as to be adapted to the age; and thus, like language, become the characteristics or exponents of special degrees and kinds of national culture. Children's games are, in part, imitations of those of adults; and, indeed, sometimes, in an imaginative way, of the serious occupations of the latter. Thus the child "plays school" with other children as scholars, or assumes the functions of the head of the household, or of the lawyer, the doctor, the mechanic, etc., this disposition resulting from the activity of the conceptive faculty peculiar to children. It has been asserted that the educator should not meddle with the plays and games of children, at least not in a positive manner; because to be really interesting they should be spontaneous. This principle is undoubtedly correct in regard to play in general, as far as it is not prejudicial to mental or physical health, or unsuited to the age of those engaged in it; but parents, and other educators, can exert very great influence over their children or pupils by joining in their games; and, in this way, they may regulate the games themselves, and thus make them an instrument of training and instruction. The principle which should limit all interference is obvious: the self-activity of the child's powers should be fostered and directed, so that amusement may be not only the means of stimulating their growth, but also a result of that growth. In what way this may be done, from the earliest childhood, by means of plays and games, such as have been employed for ages, has been demonstrated by Froebel, and by those who have practiced his method in the household or the kindergarten. The latter, however, approaches perfection chiefly through the surprising ability of the children, when stimulated by that method, to invent an endless variety of beautiful plays and games for themselves,—an ability which not only interests and amuses them as children, but prepares them for many spheres of useful activity in after life. Experiments to adapt Froebel's means of occupation, and his games, to pupils from the seventh or eighth year upward, are now being made in a number of schools in Germany and the United States. These comprise a great variety of ball games, gardening occupations, light gymnastics, and movement games; as well as those of a more mental character, such as charades, puzzles, and rebuses; and also construction games by means of geometrical solids, cutting, weaving, folding, and twining, with paper, leather, etc. The peculiar charm connected with these amusing occupations must tend to keep children from rough, boisterous, and dangerous sports, and will also obviate the need of purchasing costly and elaborate toys, in which children take but a transient interest. More particularly will it dissuade from supplying children with contrivances for such games of chance as tend to foster the spirit of gain and gambling. Children should be led to make their own toys, and to contrive their own games and plays as much as possible.

The importance of games in the education of children was recognized by Plato and Aristotle. The former proposed that the children, assembled in the temples, should be trained, under female direction, to imitate actual life in their plays, and thus to develop a taste or inclination for particular vocations. Aristotle praised games as the means of exercise, and as preventing or counteracting idleness; but he based them too exclusively on the principle of recreation. Quintilian also recognized the developing power of certain games. In the middle ages, only the knights appear to have appreciated the value of games for physical and social culture. Luther was favorable to the games of children; but the schools of the 16th and 17th centuries are, in general, noted for their gloomy neglect of this cheerful element in the education of youth. The schools of the Jesuits were, in this respect, conducted on more reasonable principles than most others. Montaigne advocated games for children, and Comenius likewise favored them. Locke commended them, but particularly enjoined that children should be required as far as possible to make their own playthings. "All the plays and diversions of children," he says, "should be directed towards good and useful habits, or else they will introduce ill ones. Whatever they do leaves some impression on that tender age, and from them they receive a tendency to good or evil; and whatever hath such an influence ought not to be neglected." Rousseau showed himself unable to appreciate the value of children's games. In the 19th century, no one has done so much to call attention to their importance as Froebel; and, at the present time, no educational system can be considered complete which does not embrace a consideration of every thing pertaining to the rational amusement of children as well as what belongs to their formal instruction. A large number of books in the English language have been published, containing a full description of every variety of games and amusements for both boys and girls, and much labor and ingenuity have been expended in inventing interesting and instructive in-door games for children, and in constructing material for them. For a thoroughly exhaustive treatment of this subject, from an educational point of view see SCHALLER, *Das Spiel und die Spiele* (1861). (See DIVERSIONS.)

GAUME, Jean Joseph, a French ecclesiastic and author, especially noted for his earnest opposition to the use of the pagan classics in education, was born in 1802, and died in 1869. He received holy orders at an early age, and, in 1827, was appointed professor of theology in the seminary of Nevers, of which institution he was afterwards the director. Subsequently, he became canon of the cathedral and vicar-general. In his *Le ver rongeur des sociétés modernes — The Canker-worm of Modern Society* (Paris, 1851), he endeavored to show that all the social evils of the last four centuries could be traced to the revival of pagan art and literature. The publication of this book gave rise to an exciting controversy in which Bishop Dupanloup strongly opposed the views of Gaume. (See DUPANLOUP.) In 1852, Gaume published *Lettres à Mgr. Dupanloup sur le paganisme dans l'éducation*, contending that only expurgated editions of Latin and Greek authors anterior to the 4th century A. D. should be read in the schools. In order to carry out this idea, he issued *Bibliothèque des classiques chrétiens, latins et grecs* (30 vols., Paris, 1852—5) and *Poëtes et prosateurs profanes complètement expurgés* (2 vols., 1857). In 1841, he was made a knight of Sylvester by Gregory XVI., and, in 1854, a prothonotary apostolic by Pius IX. (See CLASSICS, CHRISTIAN.)

GEDIKE, Friedrich, a German educator, born in 1755, died in 1803. He studied at the university of Frankfort on the Oder, was appointed sub-rector of the *Friedrichswerder Gymnasium* in Berlin, in 1776, and director of that institution, in 1779. His success in this position was very great; and the organization which he introduced into his gymnasium, became a model for all similar institutions in Prussia. His principal reform is described by himself as follows: "As it frequently happens that a young man does not make equal progress in all his studies, but advances more rapidly in some than in others, it would be unreasonable to let him attend to all the studies in the same class. Our plan is, therefore, arranged in such a manner that a scholar can attend one lesson in a higher, and another in a lower class, without missing a study otherwise necessary." In his position as chief school councilor (*Oberschulrath*), to which he was appointed in 1787, he also showed great talents as an organizer. The creation of the Supreme School Board (*Oberschulcollegium*) and the introduction of the examination of candidates for graduation in the gymnasia (*Abiturientenexamen*) were chiefly his work. In 1787, he established a teacher's seminary for the instruction of teachers of classical schools, the direction of which he retained until his death. He published a collection of his *Schulschriften* (Educational Works) in two volumes (1789-95).

GENETIC METHOD, in instruction, is but another name for what is more frequently called the *developing method*. The term *genetic* implies that the mind of the pupil is to be guided by the teacher in such a way that it will be able to perceive the *genesis* of the truths communicated, that is, their development from fundamental principles; or that it will be led to construct for itself general principles from observed facts as antecedents. This method recognizes the need of a *genesis*, or development, of actual conceptions in the mind of the pupil, as the basis for every other educational process. (See DEVELOPING METHOD.)

GENEVA COLLEGE, at West Geneva, Logan Co., Ohio, under the control of the Reformed Presbyterian Church, was organized in 1849, and chartered in 1853. It includes a preparatory and a collegiate department. In 1873—4, there were 7 instructors and 170 students (109 males and 61 females). The cost of tuition for preparatory and scientific studies is $24 per year; for classical studies, $30. The Rev. H. H. George, D. D., is (1876) the president, having held this position since 1872.

GENIUS (Lat. *genius*, innate power or capacity, from *gignere*, to produce), as used in modern times, has been variously defined by many writers, who, though differing widely as to its essential quality, are agreed as to its outward, distinguishing manifestation; namely, unusual mental ability coupled always with great intuitional or creative power. Absolute creative power cannot, of course, be claimed for it, since it does not create the elements with which it works; but that it is creative in the sense of recombining these, and discovering new and subtle relations between them, which we instinctively recognize as both real and novel, and hence view with admiration and delight, is generally admitted. Originality is its distinctive feature. In whatever field of human inquiry, therefore, it is exerted, its action and results are always the same,—it masters intuitively, or by a study so rapid as to seem intuitive, all that is known in that particular field, and, leaving talent by the wayside, reaches out into the great unknown which surrounds us on every side, rescues something from that shadowy realm, and adds it to the domain of positive knowledge. Thus, with Beethoven, it listens as if to celestial harmonies, and transcribes them for mortal ears; with Newton, it follows the falling apple till worlds and atoms proclaim the same immutable and unerring law; it broods with Napoleon over the camp fire, and, scorning experience as its guide, gathers sudden and overwhelming victory from the very field of disaster; it paints the heroic past with the simplicity and grandeur of nature herself, as in Homer, or probes, as in Shakespeare, the mysteries of the human heart with a power and vividness which ages cannot antiquate. Transcending thus all contemporaneous effort, it is always a lawgiver; while talent deduces from its works the rules by which alone excellence may be attained. Disdaining all present attainment, and living too exclusively in the future, it quite often happens, however, that the man of genius falls out of harmony with the age in which he lives. And here the duty of the educator towards him must be considered. Our first question, therefore, is, How far can the teacher influence genius? If genius be, as many think, only an abnormal development of one faculty at the expense of the others—as the ear becomes exquisitely acute by the loss of sight—the method to be adopted by the teacher is plain; namely, a repression of the abnormal faculty and a careful cultivation of the others. Whether this process would result in a reduction of them all to mediocrity, or a harmonious and powerful development of them all, remains to be considered. If, on the other hand, genius be, as it has sometimes seemed, an irrepressible impulse, an apparently higher power, acting from without, and impelling its possessor, almost in spite of himself, in a given direction, any attempt to change its course by education, must bring only injurious irritation and disgust to the pupil and discouragement to the teacher. History furnishes many instances in which genius, thwarted in its legitimate aim, and not suspecting its own power, has passed for stupidity, till a fortunate chance has disclosed its real nature. Perhaps, the question how far genius can be profitably influenced by education, must wait for an answer till a better system of psychology than we now possess has laid down the principles according to which the experiment must be conducted.

Our second question is, How far is it desirable that genius should be influenced by education? Perhaps it is not too much to say that the last and best result of education is to make men happy. If happiness be the only consideration, and if happiness, according to an extensive modern school of philosophy, consists in bringing man into harmony with his surroundings, and if further it be granted, that the mind thus gifted can be harmoniously developed and retain all its original power, the duty of the educator is again plain—the race would be benefited by such development, and the man of genius made more happy by eliminating from his mental constitution all those jarring differences which arise from inharmonious development, and which take the form of *eccentricities*. There then arises the broader consideration, how far the permanent welfare of the human race is concerned in the harmonious development we have been discussing. This question, however, in the present state of our knowledge, is, perhaps, beyond our power to solve.—Akin to *genius* are those special aptitudes which are manifested, some times at quite an early age. These, as constituting a part of the character, should be recognized by the educator; and while they should not form the basis of general training or discipline, should be allowed their specific exercise; and, in the more advanced steps of education, should become distinct objects of culture. The existence of this special talent, or of genius itself, should not be permitted to supersede the necessity of industry and application. As far as possible, the tasks imposed by the instructor should bear a proper relation to the special ability of the students, those who are of brilliant parts being required to accomplish more than those who are comparatively dull and slow to acquire. Many youths of great promise, in large schools, are often seriously injured by insufficient requirements, lapsing into sloth or bad habits by the want of full occupation. This principle is of great importance; though its application in school and college education is accompanied with many difficulties. The true educator will, however, recognize it, and allow it to guide and regulate many of his operations. The possession of the brightest genius cannot supersede the necessity of industry and study. "Invention," said Sir Joshua Reynolds, "is one of the great marks of genius; but, if we consult experience, we shall find, that it is by being conversant with the inventions of others, that we learn to invent, as, by reading the thoughts of others, we learn to think".

GEOGRAPHY (Gr. γέα, γῆ, the earth, and γράφειν, to write) has in its own name a concise yet comprehensive definition. Strictly speaking, modern scientific geography necessarily includes a great part of the results and many of the details of the several natural and physical sciences. We must look to astronomy for an explanation of the phenomena of day and night and of the seasons; and for the means of determining the true form of the earth, its magnitude, and the relative position of places upon its surface. Geology must explain the phenomena of elevation and contour, and their incessant though slow mutations. Physics only, can enable us to consider intelligently the conditions of climate, the origin of the wind and ocean currents, the rainfall, the relations of temperature to elevation, and the mysteries of terrestrial magnetism. And, finally, biology, in its various departments, must help us to comprehend the geographical distribution of plants and animals, and to understand the nature and origin of those important factors in modern civilization,—petroleum and mineral coal. Geography combines contributions from all these and many other departments of human knowledge, and subordinates them to its own chief purpose,—a knowledge of mankind, and of their distribution, of the peculiarities of the countries which they inhabit, and of the effects of their physical environment upon their social development and their condition; also a knowledge of their resources, industries, and government; and of the commercial relations of nations. It is evident that a subject so vast and comprehensive cannot be exhaustively treated in any ordinary school course of study. As in the science of arithmetic there are very many things which cannot possibly be included in an elementary or "practical" business course, so in the study of geography, a very large part of the entire subject must necessarily be omitted, partly because of the immaturity of the pupil's mind, and partly because of the pressure of other subjects upon his time and attention. The contents of the modern daily newspaper furnish, perhaps, the best general indication of what should constitute a proper course in geography for ordinary schools. With most persons, the newspaper furnishes by far the greater part of their reading, and is the chief, if not the only, source of their stock of general information. None can safely dispense with it; and, in the not distant future, with the general increase of the number of intelligent readers through improved systems of instruction, the daily journal must become more and more the medium for spreading a knowledge of the things which every one should know." Its telegrams, editorials, and communications, as well as the advertisements, relate to every great human interest, political and commercial, social and religious. They are from every part of the world; and those of chief interest involve geographical knowledge which the editor must necessarily assume to be already possessed by the reader. In order to be truly practical, a proper course of study in geography should recognize the fact that, after reading, writing, and elementary arithmetic, a knowledge of no other subject studied in school, perhaps not of all others taken together, is so frequently called into practical use, as a knowledge of geography.

In view of the limited time that can usually be given to the subject in school, it is obvious that, if a text-book be used, it should be clear and concise, and should chiefly direct the attention of the pupil to those matters which will afterwards be most needed. All unimportant details should be omitted. It is a matter of no consequence that the pupil should know the details of Arctic geography, or be able to describe minutely, and by long formulas, the courses of rivers, the precise boundaries of countries, or the exact location of a large number of towns and cities of the third and fourth orders. General but substantially correct ideas are all that are here necessary; and, in nearly every case, these will be nearly all that will remain in the pupil's mind, after all the labor and time expended upon details. A knowledge of local geography is indispensable as a basis for the proper study of the more important descriptive geography; but great care should be taken to make it no more than a well-selected outline, such as the average mind is likely to retain. When judiciously pursued in the school room, geography becomes a lifelong study, full of pleasure and profit; badly taught, it is perhaps more than any other subject, "stale, flat, and unprofitable." Geography, like all other subjects, cannot be taught by any one who is not specially prepared to teach it. The teacher should know a great deal more about it than the brief statements of the text-book. He should have a fund of illustration from books on history, travel, commerce, and other collateral subjects, so as to fill up and enliven the simple outline of the book. There are few more common or more distressing illustrations of incompetency in the school room than that of the misnamed "teacher," with his eyes fastened upon the book, now following with his finger the printed question, and then doubtfully poring over the map, or over the printed answer in the descriptive text, to see if the pupil "knows his lesson." Pupils are quick to estimate such a teacher at his proper value.

Geography is, comparatively speaking, a modern science. The Phœnicians, the Egyptians, the Greeks, and the Carthaginians, in the progress of their commercial enterprises, made a few discoveries, principally confined to the shores of the Mediterranean Sea; and the great military expeditions of Alexander, in the 4th century B. C., added somewhat to this knowledge, which Eratosthenes (about 200 B. C.) first reduced to a scientific form. The treatises of Strabo and Ptolemy contained nearly all the geographical information possessed by mankind for centuries. When Columbus embarked on his daring voyage, little addition had been made to geographical knowledge, except what had been gained during the 15th century, by the voyages of the Portuguese along the coast of Africa, stimulated by that noble prince, Henry of Portugal, surnamed *the Navigator*. The first attempt at a description of the earth, subsequent to this, was that of Sebastian Franck (*Wellbuoch*, 1534). The works of Sebastian Münster, Ortelius, Cluver, Merian, and others followed. J. Bergmann (died 1787) was the founder of physical, A. F. Büsching (1754), of politico-statistical geography. It was, however, the labors of Karl Ritter, that first gave geography a truly scientific character. A new and important era of geographical discovery began just before the middle of the 19th century, and is still in progress. The geographical society of Paris was founded in 1821; that of Berlin, in 1828; the Royal Geographical Society of London, in 1830; and the American Geographical Society, in 1852. There are now (1876), at least thirty-four such societies, differing, of course, in extent, activity, and importance. Within a brief period, and under their advice, direction, or encouragement, prodigious results have been accomplished. A few years ago, more than one-half of the map of Africa was a blank; and of the 17 millions of sq. m. of Asia, more than 12 millions was either entirely unknown, or wholly cut off from all intercourse with mankind. Twenty-five years ago, a geographer wrote of Australia, "a corner of this huge mass of land is all that is known." Besides the newly opened empires of China and Japan and the recent vast conquests of the Russians, nearly every other country of Asia has been visited by scientific explorers, eager to notice every fact relating to physical or political geography, ethnology, geology, botany, or zoölogy, and to discover the various agricultural, mineral, and other physical resources, developed or undeveloped, which play so important a part in modern civilization. In the same spirit, the limits of the unexplored regions of Africa and Australia have been greatly reduced; the Arctic Ocean has been penetrated nearly to the 83rd, and the Antarctic to the 77th, degree of latitude; and the vast and almost unknown regions in the heart of South America have been visited, again and again, by enthusiastic observers. Twenty-five or thirty years ago, the greater part of the area of the United States, — more than 2 millions of square miles, was inhabited only by savages, and was almost unknown; now, although a great part yet remains unexamined, the admiration of the world is fixed upon "its great mountain ranges, extraordinary cañons, wonderful geysers, and prehistoric ruins; upon its lakes, rivers, majestic cataracts, and broad areas of culturable land; its untold mineral treasures of every kind, and the rapidity with which its ancient solitudes are becoming the homes of an advanced civilization." (President Daly's *Annual Address,* 1876.)

The study of geography in schools is, comparatively speaking, of recent introduction. The first text-books appear to have been modeled in part upon the extensive descriptions of Strabo, and in part upon the briefer work of Ptolemy, much of which consists essentially of mere lists of places. Until the latter part of the last century, nothing had been done in the United States to popularize the subject and adapt it to school instruction. The first text-book on the subject published in that country was a small 18mo manual by Jedidiah Morse, issued in 1784. This work was of little use beyond affording a means of giving some slight geographical information to the pupils of elementary schools; but, previous to the publication of the work of William C. Woodbridge and Mrs. Emma Willard as joint-authors (*The Woodbridge and Willard Geographies and Atlases,* 1822), it continued to be the chief text-book in use on the subject. "Up to this period," says Dr. Alcott, in his biography of William C. Woodbridge, "geography as a science had received but little attention in the public schools of New England; with the exception of a few of the more favored of the larger schools, spelling, reading, and writing were nearly all the branches that received special attention. As for geography, some few schools studied Morse; a few others used as a sort of reading-book, Nathaniel Dwight's *System of Geography,* which was arranged in the form of question and answer. The vast majority, however, paid no attention to the subject." Mrs. Willard thus describes the method of teaching geography in 1814, and for some years subsequently: "In geography, the eye was not made the sole or the chief medium of teaching the signs of external things, as the forms, proportions, and situation of countries, rivers, etc.; for though maps existed, yet they were not required to be used; but the boundary was learned by the words of the book, and the latitude by numbers there set down." This presents a very striking illustration of the error, once so prevalent, of addressing the mere memory (and generally the memory of words), without any endeavor to develop the intelligence. The attempt to teach the situation of places (topography) by mere verbal description was perhaps the most absurd error which the history of education presents. William C. Woodbridge, who had been for some time engaged in teaching geography to deaf-mutes, and Mrs. Willard, of the Troy Female Seminary, appear to have been simultaneously impressed with the absurdity of the method in use, and with the need of reform in teaching geography; and both proposed to publish text-books on the subject, and on plans substantially identical. This led to the union of authorship already referred to. The application of a principle of scientific generalization to geography, whether apprehended by them or not, was not introduced into their text-books; nor was it in the work published about the same time by Sidney E. Morse (*New System of Modern Geography,* 8vo, 1823), nor in the subsequent editions of that work, which had a wide and long-continued circulation. The improvements of Woodbridge and Willard, adopted and added to by Morse, Olney, Smith, and many other authors, obliged the pupil to make the maps the chief study, and to describe in his own language, though by given formulas, the boundaries of countries, the courses of rivers, the situation of towns, etc., lists of which were furnished for this purpose. Although nearly all of the text-books then, and subsequently, contained a descriptive text relating to matters not represented on the map; such as the soil, climate, and productions of countries; yet the prominence given to the map studies, and their greater relative convenience for recitation and home study, very generally led to a practical neglect of the descriptive text. In some works, as that of Hart, which was in extensive use in American schools for many years, all exercises but those upon the maps, and a few preliminary definitions, were omitted as not strictly belonging to the subject. The evils of such a method of instruction must be obvious. When the convenient plan of printing maps and text in one volume was adopted, the pages opposite the maps were largely, and in some cases exclusively, given up to map exercises, chiefly consisting of lists of islands, capes, rivers, etc.; this, though convenient for map study, was very apt to be abused. In 1849, Arnold Guyot (q. v.) published a small volume of lectures, entitled *Earth and Man,* which was the first presentation to the American public, in a popular form, of the geographical labors of Ritter and Humboldt. This work gave a powerful stimulus, in the United States, to the study of geography as a science, and led to many changes in school text-books on the subject, as well as more rational methods of presenting it in the class room. Geographical study in one of its most interesting departments, hydrography, was stimulated by the researches of M. F. Maury, the results of which he published in *Physical Geography of the Sea.* (N.Y., 1856); also by the famous wind and current charts, constructed by him. The labors of Ritter and Humboldt have influenced the treatment of the subject in European schools, particularly in those of Germany. An outline of geography, however imperfect, early formed a part of the studies, in some at least of the schools of that country. In 1590, we find *The Cosmography,* probably that of Sebastian Münster, recommended as a useful reader in certain schools of Hesse-Darmstadt. The school regulations for Saxe-Gotha, in 1680, provide for a simple geographical outline, in schools where there were more than one teacher. In 1763, the school regulations for Prussia, drawn up by Hecker, furnish a brief outline of geography, and order its use. Similar provisions were made in Silesia and some other countries. The method followed in all appears to have been that of oral instruction by means of a few outline maps, beginning with the native village and province. Yet notwithstanding these directions and provisions, Dittes says (*Schule der Pädagogik*, Leipsic, 1876), "As late as the beginning of the 19th century, there was still, in schools, scarcely any geographical instruction; and when it was given, it was confined to a few lessons on the continents, the principal countries, and their capitals. Even in the higher schools, but little geography was learned."—Notwithstanding all that has been done to facilitate this study, and the costly geographies, richly adorned with maps and pictorial illustrations, which are supplied to the pupils, teachers quite generally complain that the results of teaching it are very unsatisfactory. The vast multitude of facts which it embraces, imperfectly generalized, or not at all, and bound together by no obvious relations, drop from the pupil's memory almost as soon as committed to it. Candidates for admission into colleges and universities, it is said, stand much lower in this branch than in any other; although none receives so much attention in the elementary schools, except reading, spelling, and arithmetic. To what causes this is to be attributed has been already in part considered and will be further noticed as we proceed. In treating of geography as a branch of elementary instruction (for such it exclusively is at the present time), we shall consider (I) what are the faculties which are specially exercised in studying it; (II) the different stages into which the instruction should be divided, and what is proper to each; (III) the age at which the study should be commenced; and (IV) the proper methods of teaching it.

I. Geography seeks to present to the mind conceptions of countries and peoples that we have never visited, analogous to those which we have acquired in relation to regions which we have actually seen. It further seeks to combine and generalize these conceptions into a systematic view of the earth as a whole, and as the abode of mankind.—The fundamental conceptions, therefore, which are to be thus amplified, combined, or otherwise modified, must be based upon objective presentation. A landscape, the more varied the better, or in default of this, a good pictorial representation, as its nearest equivalent, must furnish most of the basic elements. The first, though limited, steps must, therefore, be made through an appeal to the *perceptive* faculties. The second stage must consist in an exercise of the *conceptive* faculties in vividly recalling and combining the impressions which the objective presentation has made upon the mind. The pupil must be trained to recall the image of the mountain, the island, the forest, the placid lake, the verdant plain, or the flowing river; to see again, as it were, the tossing ocean and to hear the roar of its waves as they break upon the beach; and to picture to himself in one season of the year the aspect of nature in another. These and other analogous impressions, already obtained from physical phenomena, must furnish the indispensable basis for any true progress in geographical knowledge. — But all this training is not the teaching of geography, but only the necessary preparation for it. These conceptions are to geography but as the syllables to language, or as the gamut to melody. Throughout the teaching of geography, another mental faculty, the *imagination* of the pupil, must be brought into exercise. These conceptions of phenomena and of regions that he has actually seen must now be modified, amplified, and combined, to form conceptions of phenomena and regions that he has not seen. The conception of the rivulet must be expanded to that of the mighty river; the little lake or pond must lead the mind to the broad ocean; and the little hills, to mountain ranges. The low sun and snowy fields of winter must be modified into an arctic landscape; and the verdant meadow, into the boundless prairie. If this is properly done, and especially if pictorial representation is properly employed, the name of the Amazon will not recall to the pupil the conception of a long and crooked black mark, widening towards the right-hand side of his map; but his imagination will at once picture the broad surface and turbid waters of that vast river, its hot and humid climate, and its limitless forest solitudes with their tangle of giant vines, and their troops of chattering monkeys. When, at the proper stage, the study of maps is introduced, the discipline of the *memory* is added to that of the perceptive, conceptive, and imaginative faculties, as in remembering the location of mountains, islands, rivers, and towns, and the various facts associated with them; while an appeal is also made, with increasing frequency, to the *judgment*, in tracing the necessary relation of the location of cities to rivers and coast-lines, and in connecting the general course of a river with the elevations and slopes of the country which it drains.

II. The successive stages of geographical instruction have been already, in part, indicated. The conceptions and distinctions of mainland and island; of mountain, hill, and table-land; of lake, river, basin, valley, peninsula, and cape; of climate, vegetation, race, and other geographical elements, should first be fixed, and then the terms which embody them should be described by the pupil himself. Too much stress is usually placed upon the precise and formal definitions of these terms. Some of them, such as sea, gulf, bay, and lake, as actually used, defy all sharp differentiation; and others, such as continent and watershed, are variously used by standard authorities. It must be borne in mind that the definitions in geography have a totally distinct function from those of mathematics, grammar, and other logical or deductive sciences. In these, the correct conception of a term, such as parallelogram or adjective, is to be obtained from its definition; whereas, in geography, the definition, if required, must be developed from a correct conception of the object defined. The formal definitions of geographical terms have, indeed, their place; but this is not in the first stage of the subject. The geographical terms and their association should be followed by ideas of direction or relative position, that is, a knowledge of the cardinal points; after this, the construction and interpretation of a simple map of limited and known localities, beginning perhaps with a plan or map of the school room itself, followed by a map of the immediate neighborhood, then by that of the county as it would appear if seen from a balloon. When the pupil has been thoroughly trained to understand the symbols of the map, and readily to picture to himself the things that are symbolized by the various lines, dots, and other marks, he is in possession of all the elementary ideas essential to the subject.—Either of two opposite courses may now be pursued in giving the outline of geography itself which is usually included in a primary or elementary course for beginners. One of these plans, known as the *synthetic*, begins with the study of a map of the locality of the pupil's home or neighborhood; it takes next the map of the county, then of the state or district, and, finally, of the whole country in which the pupil resides. After this, follows the study of the simple outlines of the continent of which the country forms a part; then the outlines of the other continents or grand divisions, in some preferred order, and finally a general review, which completes and combines all that has preceded it into a brief view of the world as a whole. The other, or *analytic* system, pursues, at least in its early stages, an exactly reverse course. From the consideration of certain common phenomena and other well-known facts, the pupil is first led to form a conception of the earth as a gigantic globe or ball; then of the primary divisions of its surface into land and water; and then of the leading subdivisions of these primary elements. After learning the climatic division of the earth into zones, the pupil studies the continents, each in its turn, as in the other system. Both of these systems have their strong points, both have been successfully followed, and both have earnest advocates. Excepting in their initial and terminal stages they have much in common. One great advantage of the analytic system is, that it more readily admits the early introduction of the terrestrial globe, and requires its frequent use throughout. In no other way can certain serious misconceptions be thoroughly prevented. The use of maps of different scales, together with the inherent faults of projection, leads to erroneous ideas in regard to the relative size of countries, and to wrong conceptions of their relative positions. These first impressions are hard to correct, and, in the majority of cases, are never corrected. The globe should have the leading place in teaching elementary geography. It should be used to fix the idea of the spherical shape of the earth, its dimensions, and the division of its surface into land and water. It should give the first view of its division into continents, oceans, islands etc., and just conceptions of their relative position and magnitude. By no other means can the astronomic elements of primary geography be so simply and correctly taught; such as the causes of day and night, and of the seasons, the zones, the nature of latitude and longitude and the need of these measurements. The final stage of geography, as a branch of elementary instruction, is much more comprehensive than the preceding stages, and makes more frequent appeals to the judgment and the memory. The outline already given is to be reviewed and filled up. Political or social geography is then to be more fully and systematically taught; and the whole subject of the peculiarities and resources, together with the commercial and other relations of all the most important countries of the globe, is to be more fully shown. Geographical definitions are now desirable. These should be followed by a review of the outlines of astronomical geography, and then by a thorough training in the outlines of comparative physical geography, as furnishing the only scientific basis, and the only true principles of scientific generalization, for the facts of political geography. This training should include, at first, well-arranged exercises on simple physical maps of the hemispheres, great care being taken, at this stage, to furnish only so much of topography as is necessary for the lessons on descriptive comparative physical geography, which should immediately follow. These descriptive lessons should be brief and clear, and should substantially include the following points in their proper order: (1) a comparison of the continents or grand divisions of the land in regard to position, form, size, and principal horizontal projections; (2) the comparison and classification of islands, the chief mountain systems, table-lands, and lowland plains; (3) the oceans and ocean currents, and the great rivers and lakes; (4) climate as affected by latitude, by elevation, and by winds and ocean currents; and (5) the general distribution of characteristic plants and animals, and of the races of mankind. All, or nearly all, of these may be profitably taught simply as physical facts to be known by observation. The study of the explanatory theories belongs to a higher stage of geographical knowledge. Each of the six grand divisions should now be considered in turn; first, in relation to the leading facts of its physical geography, including its surface, drainage, climate, and characteristic plants and animals, indigenous or exotic; and secondly, on the basis of these physical facts, in relation to the separate political subdivisions, their inhabitants, towns and cities, resources, commerce, industrial development, government, and general social condition. Finally, a brief but comprehensive general review should bring out, in strong relief, the various interrelations of the different countries in regard to commerce, government, race, language, and religion.

III. As a general rule, the pupil should not begin the study of geography, at least, not what may be called *map geography*, until ten or eleven years of age. There are, however, geographical lessons, of a very simple character, which may be profitably given to younger children. These should, according to the principles already stated, be pictorial and descriptive, approximating to object-lessons, in being designed to develop ideas rather than to impart knowledge. In relation to this stage of the instruction, Currie says, in *Principles of Early School Education*, "The geography of the infant school is a series of object-lessons connected by a geographical link. It but prepares materials for the formal study of geography. It may be thought that the use of the map would facilitate this instruction; but it is quite immaterial whether the map be in the school or not. It is the business of the next stage of progress *to localize* all that has been learnt; which it does by going regularly over the map, and fixing down in position the countries, which as yet are only names to the children. The utmost use of the map that should be made in the infant school is to go over with the elder infants, if time permit, at the end of their course, on a physical map of the world, distinctly outlined so as to show the features of districts, the general outline of what they have learnt." If it were not for the early period at which most children leave school, the regular study of geography might be profitably deferred considerably longer. The prevalent practice of thrusting the study of maps upon the time and attention of very young children has much to do with the general disgust of both pupils and teachers with the usual net results of its study. The introductory course should occupy from a year to a year and a half; the subsequent course, from two and a half to three years.

IV. The principles which should guide in the selection of methods of teaching this subject, have already been explained, and the difference between the synthetic and analytic systems has been defined. The following suggestive hints will prove valuable to practical teachers: (1) the memorizing of the details of maps without sufficient descriptive matter, will leave no permanent impression on the mind; hence, (2) let the study of the map be subordinated to that of the other important facts, such as soil, climate, productions, etc., relating to the separate countries; and (3) let these facts be presented and studied in a uniform order, so that the pupil's mind will always have a guide, both for investigation and oral description. A special order of topics for this purpose has already been suggested. It must always be borne in mind, that in proportion as the pupil becomes interested in the particular country studied, he will desire to know more of its geographical details, and will remember them longer. Hence, the *exhaustive* study of the map should not precede all other lessons. After fully locating the country to be studied, by means of its boundaries, etc., the teacher may proceed with a description of some of its most striking features, passing from these to the more minute details of topography, as they are brought out by this description, until all the topographical and descriptive details are sufficiently learned. In considering the methods to be pursued in the study of geography, reference must also be made to the necessary appliances. For the first stages of the study a simple terrestrial globe and good wall-maps are indispensable. Relief maps and relief globes, as now constructed and used, are of great value in giving correct ideas of the superficial configuration of different countries. If a text-book is used, it should be chiefly a well-illustrated reading-book, using the simplest language the subject will allow, with very brief map exercises designed to sum up and locate the substance of the reading lessons. As far as possible, each locality should have some associated idea interesting to the pupils. Whatever is taught should be frequently and systematically reviewed by careful questioning, so that the impressions made may be definite and lasting. In the first stage of geographical study, the teacher is obliged to do a large part of the work; in the later stage, the pupil should be trained to do as much as possible for himself. This subject, when properly taught, furnishes an excellent and necessary discipline for the memory. The illustrations of the text-book should be supplemented, if necessary, from other sources. Books of travel may be made one of the most powerful of auxiliaries in teaching geography. If the school possesses a cyclopædia or gazetteer, it should be used for illustration or additional facts. No element in the successful teaching of geography is of greater importance than thorough reviews. These may take any one or more of a variety of forms too well known to need description. Cartography, or the drawing of neat and minutely accurate maps, is esteemed by many experienced teachers as a valuable adjunct in geographical teaching; yet it is at least questionable whether the large expenditure of time required is fairly repaid by the value of the results. The necessary topography may be much more effectively memorized and reviewed by spirited exercises in drawing, or rapidly sketching, outline maps from memory. Of systems of *map-drawing*, for this purpose, there is a considerable variety, all having more or less merit; but the great *desideratum* in this part of the instruction is, that the relative sizes of countries and distances of places should, by means of it, be permanently impressed upon the memory. This constitutes what is sometimes called the *constructive method* of teaching geography; upon which much dependence is placed in the German systems of instruction. For the aid of the pupil various devices are resorted to, some using the square, others a series of triangulations, and still others a combination of these, in connection with arbitrary measures.—See *Catechism on Methods of Teaching*, translated from Diesterweg's *Almanac* for 1855—6, in Barnard's *Journal of Education*; Gutsmuths, *Versuch einer Methodik des geographischen Unterrichts—Essay on Methodical Instruction in Geography* (1845); Diesterweg, *Anleitung zu einem methodischen Unterricht in der Geography— Introduction to Methodical Instruction in Geography* (1833); Raumer, *Geschichte der Pädagogik;* Dittes, *Schule der Pädagogik* (1876); Buisson, *Rapport sur l'instruction primaire à l'exposition universelle de Vienne en* 1873 (Paris, 1875), containing information both as to methods and appliances in present use; Currie, *Principles and Practice of Common-School Education* (Edin. and Lond.); Wickersham, *Methods of Instruction* (Phil.,1865).

GEOLOGY (Gr. *γῆ*, the earth, and *λόγος*, a discourse), the science which treats of the history of the earth. More exactly, it consists of a group of sciences which treat of the materials of which the earth is composed, and of the arrangement of these materials, whether superficial or deep-seated, and of their relations to one another; of the changes which the earth is undergoing at present, and of the series of changes through which it has heretofore passed. Nay more, the inorganic changes that have, in the course of time, resulted in the present physical geography and internal condition of the globe, have been accompanied, through the latter part of the series, by a corresponding series of appearances and modifications of organic forms; and these two sets of phenomena, organic and inorganic, have been so interdependent, that it is impossible to separate the history of the earth from the history of the life it supports. It will thus be seen, (1) that geology is intimately connected, both by the facts of its own genesis as a science and by the light it throws, in return, on the origin of existing conditions, with *physical geography*; and, (2) that, while in its branches, *mineralogy*, *lithology*, and *palæontology*, it has its descriptive and classificatory elements, these are, in fact, only subordinate to that element, which, by the aid of *dynamical geology*, weaves the material facts into a web of cause and effect,—a continuous historical argument. It is important to observe here that the part of geology which treats only of the material conditions, without regard to the reasoning which connects them into historical sequence, is recognized as *geognosy*, a term, however, that is but little used by English or American writers. Palæontology is really a natural-history science, bearing much the same relation to zoölogy, that geology does to physical geography. Geology, however, cannot be read without its aid; and it might perhaps be well to resuscitate the term *oryctology* for this application of palæontology to geological interpretation.

If the highest aim of man, in the acquisition of material knowledge, is to obtain the fullest attainable insight into his true position in the great scheme of existence, and into the responsibilities which that position implies, assuredly, geology must be one of the fields in which he may hope to gain most important information; as the truths of this science, in throwing light upon the history of his surroundings and their antecedents, of the earth which supports him, and of the life of which he is a part, must inevitably throw light upon the history and relationships of man himself. A science so completely underlying all the facts of our existence, developing so multifariously our dependence upon all parts of the scheme of which we seem to be the temporary culmination, should surely commend itself to the educator, should be beyond the need of having its importance asserted as an essential factor in the problem of universal education. Yet, as a matter of fact, the simplest teaching of geology, even to-day, is generally looked upon as supererogatory. Whether the world is six thousand years old, or of incalculable antiquity; whether it always has been as it is at this moment, or whether it has passed through a vast series of changes; whether life has or has not had its progress; whether the facts that are taught us by every pebble and every rain-storm are not worth thinking upon, or whether they lead to conclusions more wonderful than the strangest dreams of the ancients, implying more power than the boldest myths ever imagined, and illustrating the rule of law so universally that even the minutest grain of sand proclaims its control;—these are questions on which most parents and teachers have thought it scarcely worth while to enlighten the minds of the children placed in their charge. Since the answer will aid the purpose of this article, it is important to ask, why this neglect of so important a science? In the first place, the reply comes, geology is a young science, begotten in the last century, and brought forth in the commencement of the present, an offspring of the second great Reformation, the reformation not of creeds but of philosophy. Secondly, geology has had to fight its way as an intruder, as a disturber of old received notions, of deeply ingrained prejudices; its claims in the realm of thought were seen to be stupendous, and the possible consequences of their admission beyond all calculation. Thirdly, although, as in all reform movements, it has derived genuine strength from persecution by its foes, its progress has been all along greatly impeded by the too hasty zeal of many of its votaries. (For the history of the gradual development of geology, until, by Playfair's *Illustrations of Hutton*, and the patient researches of William Smith, the clues were given by which its accumulated facts could be systematized into a scientific form, see a concise account in the first four chapters of Lyell's *Principles of Geology*.) Excluding the almost invincible *vis inertiæ* of ancient prejudice, the third cause has, perhaps, been the most potent in retarding the acceptance of geological discoveries; because some hypotheses, which had been accepted by numerous and, perhaps, influential geologists, were ultimately proved to be untenable, therefore the significance of truths that were incontrovertible was unfairly belittled. It is, even to this day, a frequent argument against geology, that there is so much in connection with it that is uncertain: but those who make this objection are unwilling to admit—will not allow themselves to realize, how much of proven truth there is in the science, and how thoroughly it is founded upon facts which need only the proof of observation. Perhaps, the best way in which, in this brief article, the fundamental ideas upon which geology is based may be presented, will be to put them into the form of simple statements, or axioms, which, though incapable of proof, it would be absurd to deny, because their truth may be seen at a glance: (1) It is a matter of observation, that wherever on the surface of the earth there is moisture, there, under the influence of changes of temperature, will be chemical and mechanical changes in progress, in the rocks exposed to its action. In other words, that rocks exposed at or near the surface are forever undergoing destruction by the action of moisture in the atmosphere, of running water, waves, frost, moving ice, etc. (2) The results of this destruction, in the form of gravel, sand, and finer particles, of clay or of calcareous rocks, are continually moved onwards by this same agent water from higher to lower levels, until they finally sink to rest in the quiet depths of the ocean. (3) If this process of the degradation of the dry land were continued a sufficient length of time, it would result in the ultimate destruction of every island and every continent, and in the filling up, in part, of the depressions in the bed of the ocean; unless some counteracting agency be at work re-elevating the deposits thus accumulating beneath the sea level. (4) A large part of existing dry lands are formed of conglomerates, sandstones, clays, and limestones, the very constitution of which shows that they were originally sediments deposited from water; a fact that is still more clearly evidenced by the shells and other organic remains which they contain; and they thus show that continents have either been elevated out of the water, or that water has been withdrawn from over them. (5) Careful and extended examination has shown that alterations in the relative level of sea and land are the rule, and not exceptional cases, along coastlines; that these movements are not necessarily connected, directly at least, with volcanic phenomena; that they are exceedingly gradual; and, finally, the undoubted existence of movements of elevation and depression in opposite directions, in adjoining areas, at the same time, proves conclusively that these are movements of the crust of the earth, and not apparent oscillations due to the rising and falling of the surrounding waters. (6) As, moreover, we meet with many series of sedimentary rocks, overlying one another, in the same continent, we see that the same region must have been repeatedly submerged, and that the dry land has thus been gradually built up by successive additions. We have also clear evidence that intervals of subaërial elevation intervened between the submergencies—as the older deposits had evidently been partially denuded before the later sediments were laid upon them. (7) We have thus evidence of a force at work within the earth, capable of elevating the sediments resulting from the destruction of one continent, so that a new continent shall be formed from them; and our existing lands are in fact built up of the debris of older and destroyed continents, upheaved by this subterranean power. (8) From the observation of volcanoes and the volcanic phenomena of hot springs, and of the temperature of mines and deep borings, we have evidence of the existence either of a highly heated interior of our globe, or of local areas of elevated temperature at a greater or less depth below the surface. (9) From the constant presence of water in volcanic phenomena, from the character of the various phenomena themselves, and from the nature of many volcanic rocks, we are irresistibly led to infer that water is an active agent in developing these phenomena. (10) In addition to rocks undoubtedly of volcanic origin, we find others that appear to have resulted from the metamorphism of sedimentary rocks. Such rocks do not appear to have ever been in a state of incandescence or even of igneous fusion; they appear to have been chemically acted on by highly heated water, or by steam under pressure at great depths beneath the surface, and mechanically by the pressure itself. Whatever the cause of the change, the metamorphic nature of many of these rocks is clear, since they retain their original sedimentary stratification, and, in some cases, even traces of fossils. These gradually pass into rocks in which all signs of a sedimentary origin vanish. In such "nether-formed" or "Plutonic" rocks we have every gradation of change, from the granites and granitoid rocks, through the metamorphic, to the unaltered sedimentary rocks, on the one hand, and to the undoubtedly volcanic rocks, on the other. (11) The relative age of sedimentary rocks is determined, in the first place, by their superposition,—the lowest in the series, those on which the others rest, being necessarily the oldest; and, secondly, by the fossils they contain; because, (12) We find that each series of rocks contains the remains of certain characteristic forms of life, differing more or less from those that preceded, and from those that succeeded them. (13) We find, as a fact, that the fossils of the later rocks resemble existing forms more nearly than those of the earlier, so that the oldest deposits contain forms most unlike those of to-day. We find, moreover, that when a peculiar type of life has disappeared, it has never again been reproduced. (14) On the other hand, there is a sufficient amount of resemblance between successive faunas to justify us in asserting, that, at no time in geological history, has there been a complete and total extinction of life, succeeded by a new creation, on the earth; but that the chain of vitality has been continuous,—old forms gradually disappearing, and new forms taking their place. (15) As nature is forever destroying parts of the geological record of life that is kept in the rocks, this record for this, amongst other reasons, is in a most fragmentary condition. Imperfect as it is, few, except the professional palæontologist, can realize the enormous variety of fossils that have already been exhumed, and upon which the above generalizations have been based. (16) Where nether-formed rocks have been elevated and subsequently denuded, so as to appear on the surface, we can only judge of the age of their formation by their association with unaltered sedimentary rocks; and in extensive regions of highly disturbed and metamorphosed rocks, the determination of their age becomes one of the most difficult problems of the geologist: but even here characteristic differences in the mineral characters of different series may help us in the determination. (17) The oldest known rocks, or those underlying the lowest fossiliferous rocks, are, generally speaking, so highly metamorphosed that they may be regarded as belonging to the border period of legitimate geological history; and the ingenious speculations of physicists and chemists, as to the events that accompanied and preceded the origin of an earlier earth, apply to what is really to us a mythical epoch. (18) The evidence that has been collected in every field of geological inquiry, conclusively shows that all terrestrial forces act, as judged from a human standpoint, with extreme slowness, except in occasional and local instances; and if such energetic disturbances of ordinary conditions could ever have occurred, more widely spread over the whole or even a large part of the earth at once, it is certain that they would have left us evidences, both organic and inorganic, of the fact. The more careful and exhaustive our researches have become, the more incompatible with facts are such hypothetical universal catastrophes shown to be;—until we are impressed with the conviction, that, under the conditions which have obtained during the "historical" period of the earth, such catastrophes would involve the suspension of the ordinary laws that govern matter; and no case has, so far, been met with, apparently suggesting such an interpretation, which on examination cannot be shown to be more readily explicable by the application of known natural laws, acting through prolonged periods of time. (19) The existence of any one series of geological monuments involves, on analysis, the idea of indefinite time. For example, let us take the series of strata known as the *coal measures*. We know by examination that coal is formed from vegetable matter; that, in almost every instance, there is satisfactory proof that this matter was accumulated by growth on the spot where the coal now is found; that coal contains by its constitution but a portion of the original vegetation; that it contains that portion in a very compressed and condensed form, and consequently a single workable coal-seam, a few feet in thickness, represents an amount of vegetable matter, which, under the most favorable circumstances conceivable for growth, and without allowing for waste in other ways, must have required certainly hundreds, probably thousands, of years for its accumulation. In most localities, where the coal measures occur, we find several, in some cases many, such seams of coal vertically overlying one another, and this proves with mathematical certainty, that such periods were as many times successively repeated. Finally, intercalated between these coal beds, are beds of sandstone, clay, limestone, etc., in the aggregate hundreds, or in some cases thousands, of feet in thickness, so constituted as to show the slow and gradual mode of their accumulation, thus giving evidence of great lapses of time between the existence of the successive coal-making forests. By a process of exact reasoning, we thus arrive at the conclusion, that a vast period of time was, altogether, required for the formation of the coal measures alone; and these can be shown, in a similarly logical manner, to constitute a record of only one, and that a subordinate, series of events, in an epoch of the earth's history very remote from the present. (20) We must here insist on the importance of the evidence, given in geology, of vast gaps of what may be termed unrepresented time;—that is to say, of time during which no rocks were permanently formed to record events. Yet that such gaps occurred,—that they were of enormous duration, can be most emphatically proved. At the conclusion of the *palæozoic age*, after the formation of the coal measures, the areas that had been oscillating for æons between dry and submerged conditions, became, by an extensive upheaval, permanent dry land; the borders of the growing continent, formed of sediments thousands of feet in thickness, were elevated far out of the waters; watersheds, due probably, in the first instance, to unequal amounts of elevation, were formed, and running streams carved out valleys hundreds and thousands of feet in depth, and left standing, as evidences of their patient industry, mountains and mountain ranges sculptured in relief. The materials eroded, the chips of the sculptor, were swept away, were sorted and resorted, arranged and re-arranged, until at length, during the next great period of submergence, they found permanent rest as the deposits of the *mesozoic age*. Resting as they do on the beds and sides of the valleys, they attest the prior excavation of the latter. Such was the birth-time and such the history of the Appalachian Range: and, in the interval that subsequently occurred between the close of the mesozoic and the commencement of the cainozoic periods, such a history repeated elsewhere gave rise to the vast chains of the Rocky Mountains and the Andes;—a third and later pause saw in Europe outlines given to the Alps and Pyrenees; and, later still, the Himalayas were carved out, the mightiest of existing landmarks of geological progress. We thus see that the history of a continent is divisible into periods of extensive submergence, during which sediments are arranged into rock masses, and periods of upheaval, during which the surface configuration is given to the new land. (21) Additional evidence of the length of geological time is afforded by the changes in life that have taken place on the globe. Thus, while it can be shown that comparatively slight changes in the mammalian fauna of Europe have taken place since the *glacial epoch*, and that the great vicissitudes in climate, which that epoch (humanly speaking of such immense duration, as to be measured at least by tens or by hundreds of thousands of years) implies, did not produce any radical change of types; yet, in the *cainozoic period*, we find the whole class of mammals modified from the most generalized to the most specialized forms. And in the interval between the existence on the globe of the seas in which *mesozoic* and *cainozoic* deposits were respectively formed, a still more striking revolution in animal life occurred:—reptiles and amphibians gave way, as predominant forms, to mammals and birds; so that, if by the test of the amount of biological change, we sought to compare the length of time that elapsed between the *mesozoic* and *cainozoic* ages with that from the commencement of the *glacial period* to the present day, we should have to turn the tens of thousands of years of the latter into millions in the former.

In conclusion, the following brief summary of the fundamental conceptions of geology is presented, as constituting the basis for a series of elementary lessons upon the subject: (1) The uniformity of action of natural laws. (2) The universal unrest of matter under the influence of these laws. (3) The exceeding slowness of the great changes that result from this constant unrest. (4) The indefinite length of geological time. (5) The definite order that has prevailed in the introduction of living forms. (6) The certain order which prevails in the arrangement of rocks, and thus enables us, as a rule, to determine the relative geological age of any particular rock. From these fundamental ideas, we are led to recognize the gradual building up of our continents and the successive epochs of formation of our great mountain ranges. In this sketch is presented only the briefest outline of the basis on which geology is founded, space not permitting a consideration of the details of its lithological or stratigraphical aspects. Neither is it possible to discuss certain geological questions of profound educational interest,—such as the antiquity of the human race, the arguments in the support of the former existence of a *glacial period*, the application of the doctrine of *evolution* to geology, etc.

The general omission of geology from the course of instruction in high schools and colleges is much to be regretted; since, whether for the purpose of culture or information, it has many claims to consideration, a few of which are here suggested: (1) Of all sciences it most thoroughly cultivates a habit of inductive reasoning; (2) It so completely permeates physical geography, that a knowledge of its elements is essential to the intelligent comprehension of the latter; (3) It is obviously necessary and proper, while children are taught that the earth revolves around the sun, and other facts of the solar system, that they should also learn that this earth of to-day has had a long and eventful history, and that the living forms upon it were not created at once as we find them now; (4) The practical applications of the truths of geology are not only of scientific interest and importance but of great general utility.

If it is true that difficulty has arisen in communicating geological knowledge, it has, probably, been owing to two causes: (1) To a hesitation in telling the whole truth, and, (2) to a misconception, in teaching, as to what really constitutes the essential part of the science. It is customary among teachers to dwell upon the details of strata, fossils, etc., instead of upon general underlying principles. The inculcation of the latter, at an early age, by reference to surrounding causes and effects, and in conjunction with the earliest lessons in physical geography, would lay a sure basis for the former, to be studied if desirable at a later date. If you wish to give a child fundamental ideas regarding valleys and mountains, make him see that every rain-storm carves out, in miniature, such surface features in the sand-heap and the clay-bank; and that it requires but a sufficient increase in the number of the rain-storms to increase indefinitely the extent of their action. With a realization of the powers constantly at work producing such changes, the student will advance to an intelligent study of the rocks and of the fossils, as examples of some of the effects thus produced.

The works on *geology*, exclusive of special treatises on *mineralogy* (q. v.) and *palæontology* (q. v.), needed by the general reader, to aid him in interpreting his out-of-door readings, are not numerous. A few are here suggested: Lyell, *Principles of Geology*; this should be thoughtfully perused by every one aspiring to be considered educated, and especially by all engaged in the education of others; J. D. Dana, *Manual of Geology*, which should be at hand for general information, especially in American geology; Lyell, *Elements of Geology*, for especial information on European geology. The *Manuals of Geology*, by Jukes and by Haughton, suggest various views with regard to the chemical and physical nature of rocks and natural processes. For local geology, and the economic aspects of the science, the *Geological Reports* of the various states of the Union, of Canada, and of Great Britain, should be consulted. See also D'Archiac, *Histoire du Progrés de la Géologie*, which treats fully of the general development and progress of the science. For a graphic history of coal and the coal measures (as developed in Nova Scotia), see Dawson, *Acadian Geology*; on the phenomena of the glacial period, Geikie, *The Great Ice Age;* and on the geological history of the human race, Lyell, *Antiquity of Man;* Lubbock, *Prehistoric Man;* and Page, *Handbook of Geological Terms.* Other elementary works by the same author, on geology and physical geography, will be found of assistance to the teacher. We hesitate to recommend to beginners any of the numerous works which aim at popularizing geology. Most of these either endeavor to throw a sensational cast over the subject, or are controversial in their character; and, in either case, are generally more or less unscientific, because inexact and inaccurate. After the student can separate the correct from the incorrect, he will, however, find that such works, with all their errors, are often rich in newly-discovered facts, and in ingenious presentations of those long known.

GEOMETRY (Gr. *γεωμετρία*, from *γέα, γῆ*, the earth, and *μετρεῖν*, to measure), the science which treats of the properties and relations of magnitudes. We get the elements of this science as well as the word used to designate it from the ancient Greeks. Etymologically, the word is synonymous with our term *land surveying;* but it does not appear that it ever had simply this signification. As far back as we can trace the history of the subject, there appears to have been a body of theoretical truths and problems designated by this term. Thus, in the time of Plato, the word *γεωμετρία* does not appear to have had any more specific reference to land measuring, than it has with us; for, when he spoke of God (Θεὸς) as *geometrizing*, he certainly had no reference to land surveying. But it is not the purpose of this article to trace the history of geometry, nor to give even a *résumé* of its truths and methods. The object is to point out its place and function in a scheme of general education, and to offer certain practical suggestions in regard to the methods of teaching it. These will be presented in connection with the following inquiries and considerations.

I. *How should this subject be approached, in the first instance, by the learner?* The proper reply to this is, he should first become acquainted with the leading facts of plane geometry, without any attempt at scientific demonstration; notwithstanding the fact that the chief excellence of geometry, as a means of mental improvement, lies in its admirable body of practical logic. It is, in part, in consequence of this very fact that the learner should have an acquaintance with the fundamental truths of the science, as facts, before he attempts to reason upon them. It must be remembered that the logical faculty is not the inventive faculty. In general, its materials must be furnished it. Especially is this true with reference to fundamental truths. The history of the development of science affords abundant proof that these truths are furnished *to* the logical faculty rather than *by* it. Thus, the theorems, *If one straight line meet another straight line, the sum of the angles formed equals two right angles; The sum of the angles of a triangle is two right angles; The square described on the hypotenuse of a right-angled triangle is equivalent to the sum of the squares on the other two sides; The circumference of a circle is a little more than three times its diameter;* and many others, were known to men as facts, and their practical significance was well understood, long before their logical connection with axioms and definitions was traced. As it has been with the race, so it should be with the individual; the facts are needed as a basis for logical inquiry. We cannot reason about that concerning which we know little or nothing. Indeed, this principle has been almost universally acknowledged in the construction of our text-books on geometry upon the analytical rather than upon the synthetical model. From the time of Euclid, at least, to the present time, the custom has been to state each truth in formal proposition before attempting to demonstrate it; but this is not sufficient. The mere statement of such a truth does not give the ordinary mind a sufficiently clear and full apprehension of it to interest the attention or to guide the thought. What is needed by the individual student is exactly what was possessed by the race, as antecedent to logical inquiry: he needs to know the fact, and to perceive its practical significance, before he attempts to reason about it. For example, if the tyro has learned by trial that he cannot take three given rods and, by placing their ends together, make triangles of different forms, he is prepared to understand, and reason upon the fact that *Mutually equilateral triangles are equal.* Again, if he has experimented with two sets of proportional rods, and found that he can combine them only into triangles of the same shape, he is prepared to be intelligently interested in the reasoning which proves that, *If two triangles have their homologous sides proportional, they are similar.* And so of all the fundamental truths of plane geometry. Much of the superficial and merely mechanical, *memoriter* work which is done by pupils in geometry is caused by their having no adequate conception of the facts about which they are attempting to reason. Once show the pupil by measurement that the circumference of a given circle is a little over three times its diameter, and he will be induced to inquire whether it is so in another, and finally if this is true in all circles. Again, let him draw several pairs of chords intersecting in a circle, and by actual measurement find that the segments are reciprocally proportional, and his curiosity naturally prompts him to inquire why it is so. Finally, a few illustrations of the mechanical value of the truths with which they are becoming familiar will, with most pupils, give added zest to their study and acquisition. To know that the brace stiffens the frame because the angles of a triangle cannot be changed without changing the sides, while those of a quadrilateral can; to see how the carpenter can square his foundation, calculate the length of his brace or rafter, on the principle that the square on the hypotenuse is equivalent to the sum of the squares on the two other sides of a right-angled triangle; how inaccessible heights, and the distances between inaccessible objects, can be determined by the property of similar triangles—these, and the like applications of the principles he is about to investigate, give an air of practical reality to the abstract speculations of the science, which will be found exceedingly helpful and stimulating to the student.

II. *It should be borne in mind that geometry is a mechanical as well as a logical science.* No more mischievous mistake can be made than to underrate the *problems* of geometry; nevertheless this is not an uncommon practice with teachers. While some teachers permit the pupil to omit these problems in construction altogether, others allow him the almost equally pernicious habit of *describing the construction* without actually performing the work according to the description. Thus, they allow him to tell how an angle is *bisected* without requiring him actually to bisect a given angle: they accept a clumsy description of the process of inscribing a circle in a triangle, illustrated by a free-hand caricature of the thing itself, instead of requiring a neat and accurate construction upon correct geometrical principles. Now, this is geometry with the actual geometry left out. Nor is it simply that the mere mechanical part (not an inconsiderable or unimportant part) is left out; but any critical examination of such pupils will usually show that the *logical* part is also omitted; in short, that the pupil neither comprehends the nature of the process and the reasons for its several steps, nor is actually able to execute it. While it is possible for a person to have the mechanical faculty in a high degree, and tolerably well cultivated, and yet, being deficient in the logical faculty, to fail of being a good geometrician, it is equally possible, and, as the subject is too commonly taught it is quite common, to find those who have fair logical powers, or who have learned the formulas of logic, so destitute of mechanical ability or culture, that they utterly fail to appreciate the real spirit of geometry, even though they may know, and be able to demonstrate, its chief propositions. Nor are the skill and taste requisite to effect neat and accurate geometrical constructions, attainments to be despised in securing an education. Shall we study the science of form, and not cultivate taste, eye, or hand in reference to form? Shall we call a person proficient in the science of extension and form, who cannot construct a parallelogram, and whose taste and eye are so completely uneducated, that he cannot discriminate between a right angle and an angle of 85 or 95 degrees, and who cannot, with any degree of precision, construct either? Moreover, the zest which the construction of neat and accurate figures adds to the study, and the clearness of perception which is thus induced, are most helpful. In the course here recommended, a student will never be called upon to demonstrate a proposition in plane geometry, the figure for which he cannot construct upon geometrical principles; nor, in any well-conducted class, will the pupils pass any proposition, the figures for which they have not so constructed. It is not intended that every figure used for the purpose of demonstration should be thus constructed; but it is urged that the pupil should be able to construct every figure thus, and that he should frequently be required to do this; and, moreover, it is claimed that there is a positive power to investigate geometrical truth begotten of this method. Who that has ever attained any proficiency in geometrical investigation does not know the value of an accurately constructed figure? This is, generally, the very first step in an original investigation, the construction itself often suggesting the entire line of thought.

III. But, passing from preliminaries, suppose the student ready to commence the study of the body of geometrical propositions which make up the *Elements of Geometry*, and to learn how to demonstrate them. What should he find presented to him? Most assuredly, *a well classified arrangement of the subject matter* is a prime requisite in a branch of study which enjoys the distinction of being the most perfect of the sciences. It is, however, a singular fact, that no such classification has been commonly found in our text-books. The sole principle of the arrangement in Euclid, which has prevailed for so many centuries, is to demonstrate at first such propositions as are elementary, and hence of essential use in subsequent demonstrations. Of course, such an order of sequence as this is a necessity; but is there not that in the nature of the subject matter which calls for a more scientific arrangement? We venture to suggest the following: (1) The concepts of plane geometry are the *straight line*, the *circumference of the circle*, and the *angle;* (2) The two fundamental inquiries are concerning *magnitude* and *form*, the latter of which results from *position*. Bearing these statements in mind we shall commence with the simplest concept, the straight line. But shall our first inquiry be concerning magnitude, or concerning form or position? There are two ways of measuring a straight line, (1) the direct way, by applying one line to another, and (2) the indirect way, as in trigonometry, when, having two sides and an included angle of a triangle given, we determine the third side, etc. Now, in the first, there is little or no science, and the second is not elementary. Hence, we dismiss the question of magnitude, and turn to the question of position, which gives rise to form. Here we at once find legitimate objects of inquiry, and *the relative position of two straight lines* will be the first section. The subdivisions will be *of perpendiculars*, *of oblique lines*, *of parallels*. As these are all the positions that straight lines can occupy with reference to each other, we have exhausted this line of thought. Passing to the circumference, we dispose of the question of magnitude in exactly the same manner as we did in the case of the straight line. The direct measurement by the application of an arc involves no science; and the indirect, as when we determine the circumference from the radius, is a remote inquiry. Hence, the question of *position* recurs. Comparing the straight line and the circumference as to relative position, we find the elementary properties of chords, secants, and tangents. Comparing two circumferences as to relative position, we have external tangency, intersection, internal tangency, or one wholly interior to the other; and thus we exhaust this line of inquiry. Reaching the angle, we find that the elementary method of measuring an angle (by an arc) is the fundamental object, while the relative position of angles is an unimportant inquiry. Hence, we treat the measurement of an angle by an arc; and have the elementary propositions concerning the *angle at the center*, the *angle between intersecting chords*, the *inscribed angle*, the *angle between two secants*, etc. We thus complete the fundamental inquiries relating to the simple concepts, and proceed to treat them as combined in figures. The first inquiry now concerns the relative magnitudes of the sides and angles of a single figure; the second, the comparison of figures. Now, there are three ideas to be taken as bases of comparison; namely, (1) *equality*, (2) *similarity*, and

(3) *equivalence;* out of the last of which grows the idea of *area.* Having treated these topics, we have exhausted the subject of elementary plane geometry. No other elementary inquiry can arise; and no subsequent inquiries can be carried forward except on the basis of these. Thus we have hastily sketched the outlines of a scientific arrangement; but our special purpose is to insist, that some logical order of sequence be impressed upon the mind of the student, whether it be this, or some better one.

IV. *Hints concerning class-room work.*—The order of arrangement in the treatment of a geometrical proposition should be early fixed in the student's mind; namely, (1) The general statement of the proposition; (2) The illustration of this statement by reference to a particular diagram; (3) Any additional construction which may be necessary to the demonstration; (4) The demonstration proper. The exact language of the text-book should always be used in the statement of propositions, and in quoting definitions and all fundamental principles, unless such language is changed by the instructor or student for a particular reason; but the demonstration should not be memorized, although the general order of thought should necessarily be retained, and the spirit and style of the language be preserved. The diagram should always be constructed on the blackboard by the pupil, without prompting from any source. When the construction is complete, he should usually stand at the board, and trace the line of thought by pointing to the figure, as he proceeds in the demonstration. Some have thought it best to use the Arabic figures to designate points, lines, etc., instead of the capital letters, as ordinarily found in our text-books, the purpose being to prevent mere memorizing; but in reference to this, it is to be said that, besides its exceeding inelegance, and the fact, moreover, that the capital letters are a part of the language of the science, the device is of little or no use as a preventive of memorizing. It is quite as easy for a pupil who is so disposed, to memorize by the mere position or appearance of the parts, with figures to designate them, or even without any characters attached, as by means of letters. The pupil can make as perfect a parrot-like recitation, by merely memorizing every statement as referring to certain parts of the diagram, and by using the barbarous diction, "line this," "line that," etc., which may be heard in some class rooms, as he can in any other way. Our counsel is, use the *language of the science* (the letters), and depend on something less superficial, to prevent all improper memorizing. In referring to antecedent propositions constituting the basis of the argument, it is far more important that the proposition be quoted, than that its number be given; for the latter is of no sort of use except as a mere class-room convenience, while the former method is of essential service in bringing out the argument, and also in keeping the truths of the science fresh in the mind, and familiar on the tongue. Such methods should constitute the ordinary class-room drill; but there are others which must not be neglected, nor be unfrequent.—First among these is the giving of outlines of demonstrations without going through the details, and without reference to a diagram. This is one of the best tests of proficiency which can be applied, and the whole subject should be repeatedly reviewed in this way. Again frequent reviews of groups of theorems, without demonstrations, are essential. Thus, the teacher may call for the propositions concerning *equality of triangles*, the elementary propositions concerning the *measurement of angles*, the propositions concerning *parallels*, etc. When a student is assigned such a topic, he should give all the facts embraced under it (definitions, propositions, corollaries, and scholiums), without being prompted. These three classes of exercises will form the staple of all class-room work.—For a final review, students may be set to tracing certain lines of thought running through the whole subject. Thus, given the subject of *equality*, he will define it, distinguish it from nearly related notions, such as similarity and equivalence, show that the two latter notions make up the former, classify all the propositions of elementary geometry which relate to equality, and be able to give them with their demonstrations, pointing out any common principle which may seem to run through the demonstrations. In reference to the latter he will find that *equality* is always proved by the mere application of one figure to the other, with the modification, that in case of *equality by symmetry* the figures are divided into parts, which parts are then applied as before. In like manner, he can be set to study the subject of *similarity*. Such a study will not be merely a review of the section on *equality*, or that on *similarity*, since these ideas are the basis of the thought in many propositions where they do not constitute the main subject, or purpose. In fact, it will be found that nearly one-half of the propositions of geometry involve one or the other of these notions (*equality* and *similarity*) as the basis of thought. Again he may be set to select and study the propositions relating to *form*, and then those in which *magnitude* is the object of inquiry; these two ideas dividing between them the whole domain of geometrical truth.—Finally it is of the highest importance, that, from first to last, the pupil be trained in the practical application of the abstract truths as fast as they are learned. No truth is well learned until it can be applied; and it would be quite incredible to one who has not had large observation, how fully one may appear to understand a geometrical truth, and yet be totally unable to apply it. The writer has examined in geometry hundreds of students desiring to enter college in "advanced standing," and has made this a matter of careful observation. For example, he has usually asked such students, "How do you find the area of a spherical triangle?" Generally the answer has been promptly given, "By multiplying the spherical excess by the tri-rectangular triangle;" and, quite generally, the candidate has been found able to demonstrate the proposition. But in no instance has the examiner ever found a student, who had not been trained in the practical application of the statement, able to compute the area of a triangle the angles of which are, say 110°, 94°, and 87°, on a sphere, the radius of which is 2 feet. In fact, they could tell what a tri-rectangular triangle is, what part of the sphere it is, and what the spherical excess is; but not one could actually find the number of square inches in the area of the triangle. A student may appear to have thoroughly mastered solid geometry, and yet be totally unable to solve such a problem as, To find how many barrels of water a cistern in the form of the frustum of a cone will contain. It is obvious, therefore, that the teacher of geometry should never allow his pupils to omit the practical examples.

V. *Geometrical Invention.*—This term is used to designate the power to discover demonstrations of propositions or the solution of problems. Many excellent teachers quite overrate the ordinary student's power in this direction. Some have even thought, that, from the first, a pupil can be led to discover the demonstrations of all the propositions. New classes may, indeed, make commendable progress in geometry, and have put into their hands only the mere statement of propositions; but it will be found that they do not originate the demonstrations which they bring into the class; they simply look them up in other text-books, and thus learn them. After a pupil has acquired a considerable stock of geometrical knowledge, any real test will show that original demonstrations are but slowly evolved, even of the simplest propositions. Many students have little or no capacity in this direction; and, therefore, to make it the staple of geometrical teaching would be supreme folly. Some exercise of this kind may, and should, be given from an early stage of the study; and students may be stimulated and helped in the work, so that all the ability for such exercise, which really exists in the class, may be brought out; but, after all, there is no reasonable ground to expect that any large amount of such ability can be developed in the majority of students of elementary geometry. Certainly, this is not the purpose for which geometry holds its eminent place in the curriculum of our colleges. It is, that students may learn what a logical argument is and how to frame it, from the study of such arguments, carefully elaborated and expressed by the ripest culture. What but the most clumsy work can be expected from the tyro in framing such arguments, if he has not had much study of the best models? To put a demonstration in good form, as well as to evolve it, is the ripest fruit of scholarship, not the daily work of beginners; the ability to do either is to be acquired, in the first instance, by a protracted and careful study of the work of masters. It is not the purpose of these remarks to discourage all attempts to secure original demonstrations, but to guard against a serious error into which enthusiastic and ambitious teachers are in danger of falling; and the conclusion is, that, for the most part, pupils must be furnished with the demonstrations of elementary geometry, either by a text-book, or by the hints of a competent and judicious teacher; and that it is best that it should be so. But let not this topic of geometrical invention be confounded with that of practical exercise in applying the truths learned. The latter is, as has been said, essential for all, but especially important for those who are dull of apprehension.

VI. Lastly, it is to be remarked that a great change has come about, within the last century, in reference to the kind of demonstration which is admissible in geometry. Formerly, geometricians were totally averse to admitting any conception of *motion* or *time* into a geometrical argument. These were rigidly excluded as foreign to the subject and as defiling its purity. Both are now freely admitted. Again, the infinitesimal method was formerly as rigidly excluded, but is now coming to be admitted. These methods greatly facilitate geometrical inquiry, and are now freely used by the best writers and teachers. (See MATHEMATICS.)

GEORGETOWN COLLEGE, at Georgetown, D. C., was founded in 1789, but was not chartered until 1815. It is a Roman Catholic institution, under the direction of members of the Society of Jesus; and is supported by fees from students. In the classical department, the entire course, including the preparatory classes, is of seven years, the last four of which correspond generally with the classical course of most American colleges. The institution has a well-equipped astronomical observatory, philosophical and chemical apparatus, and a cabinet of minerals, shells, etc. The college library contains 30,000 volumes, amongst which there are many rare and curious works. One hundred of these volumes were printed between the years 1460 and 1520; three manuscripts are anterior to the year 1400, and many others are of almost as early a date. The society libraries contain about 3,000 volumes. The charge for tuition, board, lodging, etc., is $325 a year; the regular charge for day scholars is $60 a year. In Washington, there is a medical department, established in 1851, and also a law department, established in 1870. In 1875–6, there were, in the classical department, 19 instructors and 215 students, of whom 54 were of the collegiate grade; in the medical department, there were 13 instructors and 80 students; in the law department, 4 instructors and 39 students. At the commencement in 1876, the degree of A. B. was conferred on 7 graduates. The presidents of the college, with the date of appointment, have been as follows: the Rev. Robert Plunket, 1791–3; the Rev. Robert Molyneux, 1793–6; the Rev. Louis W. Dubourg, 1796–9; the Rev. Leonard Neale, 1799–1806; the Rev. Robert Molyneux, 1806–8; the Rev. Wm. Matthews, 1808–10; the Rev. Francis Neale, 1810–12; the Rev. John Grassi, 1812–17; the Rev. Benedict J. Fenwick, 1817–18; the Rev. Anthony Kohlmann, 1818–20; the Rev. Enoch Fenwick, 1820–22; the Rev. Benedict J. Fenwick, 1822–25; the Rev. Stephen Dubuisson, 1825–6; the Rev. William Feiner, 1826–9; the Rev. John G.

Beschter, March, 1829–Sep., 29; the Rev. Thomas Mulledy, 1829–37; the Rev. William McSherry, 1837–9; the Rev. Joseph A. Lopez, Jan. 1840–April 1840; the Rev. James Ryder, 1840-45; the Rev. Samuel Mulledy, Jan., 1845–Aug., 45; the Rev. Thomas Mulledy, 1845–8; the Rev. James Ryder, 1848–51; the Rev. Charles H. Stonestreet, 1851–2; the Rev. Bernard A. Maguire, 1852–8; the Rev. John Early, 1858–66; the Rev. Bernard A. Maguire, 1866–70; the Rev. John Early, 1870–73; the Rev. P. F. Healy, appointed in 1873 and still (1876) in office.

GEORGETOWN COLLEGE, at Georgetown, Scott Co., Ky., chartered in 1829, is under the control of the Baptists. It is supported by tuition fees and the income of an endowment of nearly $75,000. The real estate of the college is valued at about $75,000. The library contains between 5,000 and 6,000 volumes. The institution has good philosophical and chemical apparatus, a cabinet of minerals, fossils, and shells, and a museum of curiosities. It comprises an academic or preparatory course and a collegiate course. The curriculum is distributed into the following departments of study: (1) English; (2) Latin; (3) Greek; (4) Modern languages; (5) Mathematics; (6) Physical Sciences; (7) History and Political Economy; (8) Mental and Moral Philosophy. Any student who completes the course in any one department receives the title of *Proficient* in that department. Other degrees are Bachelor of Sciences for the full English course; Bachelor of Arts, if Latin and Greek be added; Master of Arts for the complete course. The Western Baptist Theological Institute is connected with the college. The cost of tuition in the collegiate course is $50 per year, and in the academic course $40. Candidates for the ministry receive instruction free, and needy students who intend to teach are given credit for tuition until they are able to pay. In 1876, there were 8 instructors and 107 students (84 collegiate and 23 preparatory). The presidents of the college, with date of appointment, have been as follows: Wm. Staughton, D. D., 1829; Joel S. Bacon, D. D., 1830; B. F. Farnsworth, 1836; Rockwood Giddings, D. D., 1838; Howard Malcom, D. D., 1840; J. L. Reynolds, D. D., 1850; Duncan R. Campbell, D. D., 1852; N. M. Crawford, D. D., 1865; B. Manly, Jr., D. D., 1871 (the present incumbent, 1876).

GEORGIA, one of the thirteen original states of the American union, was first settled at Savannah, by colonists from England, under Gen. James Oglethorpe, in 1733. Its present area is 58,000 sq. m.; and its population, according to the census of 1870, was 1,184,109, included in which were 545,142 colored persons, 40 Indians, and 1 Chinaman. According to its entire population, it ranked as the 12th among the states; and, as to colored population, as the 1st. Its gain in population, during the ten years preceding, was 12 per cent.

Educational History.—The original constitution of this state, adopted in 1777, contained a provision requiring schools to be "erected in each county, and supported at the general expense of the state"; but this was omitted in the revision of 1789, educational affairs being left to the regulation of the general assembly. In 1783, the assembly donated 1,000 acres of land to each county for the support of free schools; and, in 1784, 40,000 acres were given for the endowment of a state university, which was chartered in 1785. In 1792, an act was passed appropriating 1,000 acres for the endowment of an academy in each county of the state. In 1817, the sum of $250,000 was appropriated for the support of schools for the poor. According to the census of 1860, there were in the state 32 colleges and high schools, with 3,302 students; and 1752 public schools, containing 56,087 pupils, the total income for the support of which was $449,966. Georgia was quite celebrated for the number and excellence of her female seminaries. There was, however, no regularly organized system of common schools, supported by public taxation, and open to all classes; although efforts were made in 1845, and again in 1856, to establish such a system. In 1849, a law existed giving $20,000, to be divided among the several counties of the state to support schools for poor children; but such was the general apathy in regard to education, that 32 counties failed to make any return so as to obtain their portion of the endowment. In 1850, there were 213,903 native white adults in the state, of whom 20 per cent were unable to read and write. In 1860, the number of illiterates had been reduced to 18 per cent. The state constitution of 1868 provided for the establishment of "a thorough system of general education, to be forever free to all children of the state," and created the office of state school commissioner, to be appointed by the governor, with the consent of the senate, and to hold his office for the same term as the governor. An act establishing such a system of public instruction was passed Oct. 13., 1870, under which many schools were put in operation, under the supervision of the first school commissioner, J. R. Lewis. His report, made in 1871, showed that there were enrolled in the schools 42,914 white pupils, and 6,664 colored, making a total of 49,578. Very great mismanagement and imprudence, however, characterized the operations of those who had the direction of the school system during that year; the school fund was diverted from its legitimate object, a large debt was contracted, and many defects were found to exist in the school law. From these causes, the schools were closed during the year 1872. In that year, Gustavus J. Orr was appointed school commissioner; and under his advice, a new law was passed (Jan. 19., 1872), in pursuance of which the system as it exists at present was organized. The year 1873 opened with brighter prospects. The school funds which had been accumulating from the regular sources had been faithfully kept; and the law providing for the payment of the debt of 1871 had yielded $174,000, which sum was apportioned among the counties, and faithfully disbursed. The regular school fund had accumulated to the amount of $250,000, which also was properly apportioned.

Under these circumstances, the schools that year made considerable progress. The annual report of Commissioner Orr, for 1873, showed that there were in attendance at the schools 83,677 pupils, of whom 63,922 were white children, and 19,755 were colored. During the next year, the attendance increased to 135,541,—whites, 93,170, colored, 42,371. The amount of school funds apportioned in 1874, was $265,000. The report for the year 1875 showed a still further increase, the aggregate attendance being 156,349,—whites, 105,990; colored, 50,359. During 1874, five school laws were enacted; but no important change was made in the system, except the requirement that the enumeration of the school population should be made every four years instead of every year, as formerly.

School System.—The common-school system of Georgia is under the direction of the following officers: (1) A *state school commissioner* appointed by the governor, with the consent of the senate, for four years, who is charged with the administration of the school laws and the general supervision of all the public schools of the state, as well as the apportionment of the school revenue; (2) A *state board of education*, comprising the governor, secretary of state, attorney-general, comptroller-general, and school commissioner. This is an advisory body, with whom the school commissioner has the right to consult in regard to any of his official duties; and appeals may be made to it from his decisions touching the proper construction or administration of the school laws; (3) *County boards of education*, each consisting of five freeholders, elected for four years by the grand jury, whose duties are to form school districts, establish schools, purchase grounds, build school-houses, prescribe text-books (all of which must be unsectarian), grant licenses to teachers, on the recommendation of the county school commissioners, and have a general supervision of all the schools in their respective counties; also to determine local controversies referred to them by appeal, subject to a still further appeal to the state commissioner; (4) *County school commissioners*, elected by the county boards of education, who examine applicants for licenses to teach, and revoke licenses for immorality, incompetency, or cruelty to pupils, subject, however, to an appeal to the county boards of education. The county school commissioner is also required to visit each school in his county at least twice a year, to make an annual census of the children of school age (between 6 and 18), to apportion the school fund of the county among the sub-districts in proportion to the number of such children in each, to make such reports to the state commissioner as he may require, and to act generally as the medium of communication between the state commissioner and the subordinate school officers.

The county boards of education may establish *evening schools* for youths over 12 years of age, who are unable to attend the day schools; and, under the direction of the state board, they may also establish self-sustaining *manual labor schools.* No county is entitled to a participation in the state school fund unless its board of education has provided, by taxation or otherwise, for keeping primary schools in operation at least three months in the year, or two months in the case of *ambulatory schools*, which may be organized in sparsely inhabited districts. Separate schools are prescribed for colored children, but these schools must afford equal advantages with those for whites. The law prohibits the exclusion of the Bible from the public schools, but does not permit any books of a sectarian character to be used. Public school sites and buildings, and the furniture of the latter, are exempt from taxation and from sale on execution.

The *school revenue* at present consists of the proceeds of the poll tax and of special taxes on shows and exhibitions, and on the sale of spirituous and malt liquors, endowments, devises, gifts, and bequests made to the state for educational purposes, all educational funds and revenues due the state university, and one half of the rental of the Western and Atlantic railroad. From these resources there were received during the year ending June 30., 1875: poll tax, $3,729.83; tax on shows and exhibitions, $2,069.50; and half rental of W. and A. railroad, $150,000; making a total of $155,799.33. This fund is apportioned among the several counties in proportion to the number of children from 6 to 18 years of age, and of confederate soldiers under 30 years of age resident in each. In four counties,—Bibb, Chatham, Glynn, and Richmond, and in three cities,—Atlanta, Columbia, and Griffin, the school systems are organized under local laws.

Educational Condition.—According to the report of the state commissioner for 1875, there were belonging to the general common-school system 3,669 schools, of which 2,790 were for white and 879 for colored pupils, all the counties in the state having common schools, except Early. Besides these, there were, in the counties and cities under special systems, 128 elementary schools and 9 high schools, 58 of the former being graded and 70 ungraded schools. There were also reported 820 private elementary schools. The studies pursued in the common schools are reading, orthography, writing, arithmetic, geography, and English grammar.

The following are the principal items of the common-school statistics for 1875:

Number of pupils admitted, Whites...	114,648	
" " " Colored..	55,268	
Total..		169,916
Average daily attendance..................		105,766
No. of children of school age, Whites..	218,733	
" " " " Colored.	175,304	
Total..		394,037

For the private elementary schools the following statistics were given in the report for the same year:

Number of Schools..........................		820
" " Teachers..........................		903
" " Pupils taught, Whites......	21,275	
" " Colored.....	4,176	
Total..		25,451
Average monthly cost of tuition...............		$1.88.

The whole amount of money received and expended for the support of public schools, in 1875, was $435,319. Of this, $291,319 was supplied by the state; and $144,000, raised by local taxation. The amount apportioned to the several counties was $151,304. The Peabody Fund contributed $6,900 to the support of schools in Georgia, during the year.

Normal Instruction.—No provision has been made in this state for the special training of teachers. In his annual report for 1875, State Commissioner Orr said, "The want of well-qualified teachers for our white schools has been much felt. The want of the white schools in this respect, however, is small in comparison with that of the colored schools. It has been impracticable to put colored schools in operation at all, in some places, in consequence of the lack of competent instructors." He, therefore, recommended that an "annual appropriation of $10,000 be made for establishing two normal schools for whites, one to be located in the northern, and the other in the southern portion of the state; and that the law making an appropriation of $8,000 to the Atlanta University be repealed, and that, in lieu thereof, $10,000 be annually appropriated for establishing a normal school for colored pupils." Bowdon College has a normal class; and the Atlanta University (q. v.), a higher and a lower normal department, the former embracing a four years' course, and the latter a shorter one for primary school teachers. And, besides these, there is the Haven Normal School, at Waynesboro, which, in 1874, had 162 students. The state appropriation to the Atlanta University is designed to encourage the training of colored teachers in that institution.

Secondary Instruction.—The special systems above referred to comprise 9 high schools,—2 in Bibb County, 2 in Chatham County, 2 in Atlanta, 1 in Columbus, and 2 in the city of Griffin. Macon also has 2 high schools; and Savannah, 8 high-school classes. Besides these, there were reported 104 private high schools, having 171 instructors, and 5,379 students, of whom 3,087 were males, and 2,292 females. The studies pursued in these schools included the usual English, classical, mathematical, and scientific branches; and the average monthly cost of tuition was $3.13 per pupil, ranging from $5 to $1.15. There are also several business colleges.

Superior Instruction.—The University of Georgia (q. v.), at Athens, is the principal institution of this grade in the state. Others are contained in the following table, according to the annual report of the state commissioner for 1875:

NAME	Location	Religious denomination
University of Georgia....	Athens	Non-sect.
Atlanta University......	Atlanta	Non-sect.
Mercer University........	Macon	Baptist
N.Georgia Agr.&Mech.Col.	Dahlonega	Non-sect.
Emory College...........	Oxford	M. E. South
Martin Institute..........	Jefferson	
Pio Nono College........	Macon	R. C.

Besides these, there are several institutions for the higher education of women, that claim the rank of colleges, having preparatory and collegiate courses of study. According to the report of the U. S. Commissioner for 1874, there were in these institutions 102 instructors and 1,408 students. The following list contains those included in the report of the state commissioner for 1875:

NAME	Location	Religious denomination
Cherokee Baptist Fem.Col.	Rome	Baptist
Conyers Fem. Col.........	Conyers	
Dalton Fem. Col...........	Dalton	Meth. Epis.
Houston Fem. Col.........	Perry	Baptist
La Grange Fem. Col......	La Grange	M. E., South
Le Vert Fem. Col..........	Talbotton	Methodist
Rome Fem. Col............	Rome	Presb.
Southern Fem. Col.........	La Grange	Non-sect.
Southern Masonic Fem.Col.	Covington	Non-sect.
Wesleyan Fem. Col.......	Macon	M. E., South
West Point Fem. Col......	West Point	Union
Young Fem. Col...........	Thomasville	

The State College of Agriculture and the Mechanic Arts, endowed with the congressional land grant of 270,000 acres, is a department of the University of Georgia. The North Georgia Agricultural and Mechanical College became likewise a branch of the University in 1872. Atlanta University (q. v.) was organized, in 1867, by the Freedmen's Bureau and the American Missionary Association, and is largely supported by the latter body. It is designed especially for the education of colored youth. In pursuance of an act of the legislature, there is an annual state appropriation of $8,000 for its support. Objections have been urged against this institution on the ground that such a "movement in favor of university education for the colored people is far in advance of the demands of the present condition of colored society"; and that the money thus expended should be exclusively devoted to instructing and training teachers specially for the work of elementary schools. (*Commissioner Orr's Report for* 1875.)

Special and Professional Instruction.—The institutions for special instruction are the Georgia Institution for the Education of the Deaf and Dumb, at Cave Spring, and the Georgia Academy for the Blind, at Macon. The former, in 1874, had 5 teachers and 51 pupils, of whom 25 were females; the latter had 7 instructors and 51 pupils—30 females; its receipts, which were almost wholly from state appropriations, amounted to $15,115.37. There is a law school connected with the University of Georgia, in which the course is for one year, including the whole twelve months. The Medical College of Georgia, located at Augusta, constitutes the medical department of the University of Georgia; the value of its grounds, buildings, and apparatus is estimated at $60,000, and its library contains 5,000 volumes. Besides this, there are the Atlanta Medical College, founded in 1854, which, in 1874, had a corps of 11 instructors, and 140 students; and the Savannah Medical College founded in 1838, which, in 1874, had 12 instructors, and a graduating class of 16 students.

GEORGIA, University of, at Athens, Georgia, was chartered in 1785, receiving 40,000 acres of wild land, granted in 1784 by the legislature, for the endowment of a college, or seminary of learning. It did not go into operation for some years. In 1801, the first building was erected, and, in 1804, the first class graduated. The institution was suspended, from September 1863 to January 1866, in consequence of the civil war. The funds of the university, in 1876, amounted to $373,170; the value of its buildings and apparatus at Athens was $183,000. The campus contains 37 acres, and there is an experimental farm of 16 acres. The college and society libraries contain about 20,000 volumes. The medical department has a library of about 5,000 volumes. The university comprises an academic department (known as Franklin College), the Georgia State College of Agriculture and the Mechanic Arts, a law department (established in 1860), a medical department (the Medical College of Georgia, at Augusta, established in 1830), and the North Georgia Agricultural College (at Dahlonega). The State College and the North Georgia College were established in 1872, with the proceeds of the congressional land grant to Georgia. The Medical College became a department of the university in 1873. The following schools are embraced in the academic department: (1) Latin language and literature; (2) Greek language and literature; (3) modern languages; (4) belles-lettres, including rhetoric, criticism, and esthetics; (5) metaphysics and ethics; (6) mathematics; (7) natural philosophy and astronomy; (8) chemistry, geology, and mineralogy; (9) history and political science; (10) English literature. These separate schools are so arranged as to be combined into several departments, which thus offer systematic courses of education of different types of culture. Three degrees are conferred in this department: Bachelor of Philosophy, Bachelor of Arts, and Bachelor of Science. The State College has three departments: agriculture, engineering, and applied chemistry. Four degrees are conferred: Master of Agriculture, Bachelor of Agriculture, Bachelor of Engineering, and Bachelor of Science. There are five university degrees; namely, Master of Arts (requiring certificates of proficiency in all the academic schools except the last), Civil Engineer, Civil and Mining Engineer, Bachelor of Law, and Doctor of Medicine. The cost of tuition in the academic department is $75 a year; in the State College, $40. Fifty young men of limited means, residents of Georgia, are admitted to the academic department free of tuition, in return for which they are expected to teach school in the state for a term of years equal to the time they have enjoyed the advantages of the university. Needy students intending to enter the ministry also receive tuition free. In the State College, state scholarships, exempting from tuition fees, are granted to as many students, residents of the state, as there are members of the House of Representatives and senators in the General Assembly.—The North Georgia Agricultural College occupies the former United States mint, donated by Congress. It admits both sexes, and has a collegiate and an inferior department. Many of its students have become teachers. Tuition is free.—In 1875–6, the number of instructors and students in the different departments of the university was as follows:

Departments.	Number of instructors.	Number of students.
Academic	12	104
State College	8	93
Law	4	6
North Georgia College	5	245
Medical	12	124
Total (deducting repetitions)	33	572

At the commencement in 1875, 72 degrees were conferred. The whole number of *alumni* of the university, at that date, was 1,388 (of whom 980 were living), including 1,153 bachelors of arts, 141 of law, 41 doctors of medicine, and 53 recipients of other degrees. The heads of the university bore the title of president till 1860; but since that time they have been styled chancellor. Their names are as follows: Josiah Meigs, LL. D., 1801–11; the Rev. John Brown, D. D., 1811–16; the Rev. Robert Finley, D. D., 1816–17; the Rev. Moses Waddell, D. D., 1819–29: the Rev. Alonzo Church, D. D., 1829–59; the Rev. Andrew A. Lipscomb, D. D., LL. D., 1860–74; and the Rev. Henry H. Tucker, D. D., appointed in 1874 and still in office (1876).

GÉRANDO, Joseph Marie de, Baron, born in Lyons, Feb. 29., 1772, died in Paris, Nov. 11., 1842. Educated originally for the priesthood, he changed his purpose, and entered the army, with which he visited Germany, Switzerland, and Italy. While in garrison at Colmar, the Institute proposed the question, "What is the influence of signs on the formation of ideas?" De Gérando's dissertation on this subject took the prize, and caused his invitation by Lucien Bonaparte to Paris, where he entered the ministry of the interior. After filling various civil and military positions in France, Tuscany, and the Papal States, and lecturing in Paris before the faculty of law, he was, in 1837, raised to the peerage. His principal educational and philosophical works are:—*Des signes et de l'art de penser, considérés dans leurs rapports mutuels* (1800); *De la génération des Connaissances Humaines* (1802), *Histoire Comparée des Systèmes de Philosophie relativement aux Principes des Connaissances Humaines* (1803); *Cours Normal des Instituteurs Primaires* (1832); *Éducation des Sourds-Muets de Naissance* (1827); *Du Perfectionnement Moral et de l'Éducation de Soi-même* (1824). This last is the work by which he is most favorably known. An English translation of it (*Self-Education*) was published in Boston, in 1830. See MOREL, *Essai sur la vie de J. M. Baron de Gérando* (1846); *North American Review* for April, 1861.

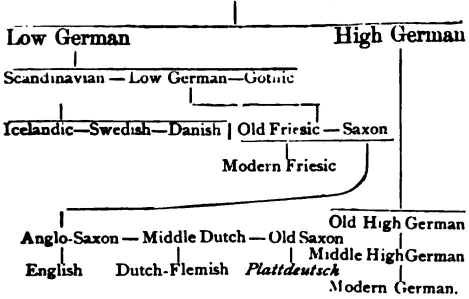
GERMAN-AMERICAN SCHOOLS, a large class of schools in the United States, in which a part or most of the instruction is given in the German language. They consist of several classes: (1) The earliest and still the most numerous among these schools are the *denominational schools*, connected with the German churches. These schools are chiefly supported from the wish to establish the greatest harmony between school, church, and family, and to induce the children of German church members to connect themselves with the congregations to which their parents belong. The greatest zeal for the establishment of denominational German-American schools has been shown by the German Catholics and the German Lutherans. The schools of the former were, in 1869, attended by about 157,000 children. The Lutherans have about 3,000 German congregations, the majority of which support German-American schools. (2) A large number of *private schools*, in most cases consisting of only one or two classes, are patronized by parents, mostly Germans, but to some extent also by others, who regard the ability to speak German as a valuable acquisition from a business point of view. (3) Since 1848, a number of German-American schools of a higher grade have been founded, partly by societies. These are designed not only to teach their pupils to speak German fluently, but to transplant to American soil the *developing method* of instruction, which prevails in Germany, and to realize the ideal of a German real school. With a number of these schools, kindergartens are connected. Schools of this kind have been founded in Milwaukee (1853), New York (1854), Brooklyn, Hoboken, Detroit, Baltimore, Philadelphia, St. Louis, and some other places.

GERMAN COLLEGE, at Mount Pleasant, Iowa, under the control of the Methodist Episcopal Church, was incorporated in 1873. It is designed to be the theological institution of the German Methodists in the West, North-west, and South-west. It is intimately connected with the Iowa Wesleyan University, though independent in finances and control. All German students become members of German College; and all not German, of the University. The students of the College are admitted free to all the classes of the University, in which most of the collegiate instruction is given. The college has an endowment of $25,000. It includes a preparatory and a theological department. Instruction is given in music, and facilities are afforded for Americans to learn German. In 1875—6, there were 3 instructors and 50 students. The Rev. H. Lahrmann is (1876) the acting president.

GERMAN LANGUAGE. The German language ranks, with the English and French, in value and importance, above all the other languages of the civilized world. It is very extensively studied in the literary institutions of every civilized country, and as a department of school and college instruction, continues to assume, from year to year, greater prominence. The height to which German literature and science have attained in every department, and the great and rapid progress of German scholarship, are universally recognized. Thomas de Quincey, in his *Letters to a Young Man*, thus refers to the comprehensiveness and extent of German literature: "Dr. Johnson was accustomed to say of the French literature, that he valued it chiefly for this reason, that it had a book upon every subject. How far this might be a reasonable opinion fifty years ago, and understood, as Dr. Johnson must have meant it, of the French literature as compared with the English of the same period, I will not pretend to say. It has certainly ceased to be true, even under these restrictions, and is in flagrant opposition to the truth, if extended to the French in its relation to the German. Undoubtedly, the French literature holds out to the student some peculiar advantages, but all these are advantages of the French only in relation to the English, and not to the German literature, which, for vast compass, variety, and extent, far exceeds all others as a depository for the current accumulation of knowledge. The mere number of books published annually in Germany, compared with the annual product of France and England, is alone a satisfactory evidence of this assertion." The authors of the great educational ideas and reforms which, during the last two hundred years, have led to the creation of the modern systems of education, were nearly all Germans; and, at the present time, German literature, in every branch of educational science and art, is so much more copious and instructive than any other literature of the world, that the superior advantages of German over other foreign languages for every one connected with educational labors are, at the present time, hardly disputed. The progress of comparative linguistics has shown that a knowledge of the German grammar and of its history offers greater advantages for the complete understanding of the structure and laws of the cognate English language than the study of any other language, ancient or modern. The influence which considerations like these have had upon the admission of German into the course of instruction of many English institutions from which it was formerly excluded, has been more recently strengthened by the restoration of a powerful German empire, and the steadily rising influence of this new empire in the commercial affairs of the world. In the United States, the presence of a numerous German-speaking population, numbering, according to the smallest estimate, no less than five millions, has caused German to be looked upon by large classes of the population as an acquisition of great practical value. In the United States, therefore, German is now studied to a much larger extent than French. In some of the smaller countries, near or adjacent to Germany, and inhabited by kindred races, as Sweden, Norway, Denmark, and Holland, the study of German begins early, and receives so much attention, that the educated classes of these countries are generally able to speak the language with fluency. In France, the study of German has greatly increased during the present century, and has generally been favored by the men who have done most for the educational progress of the country. Cousin, Jules Simon, and Waddington, were among its warmest friends.—For so much of the study of German as it has in common with French and other modern languages, we refer to the article *Modern Languages*, as we present under this head, exclusively, what is to be said of German and its value as a branch of instruction.

The language of modern Germany is one of a cluster of languages which, collectively, are called the Germanic or Teutonic languages. They embrace, of living languages, the modern German, the Swedish, Danish, Icelandic, English, Dutch and Flemish, and the Friesic; and, of the languages now extinct, the Gothic and Anglo-Saxon; and they constitute one of the branches of the Indo-Germanic or Indo-European group. Long before Germany had a literature, the divergence of the original Teutonic tongue into Low German and High German had begun. The language of modern Germany is the only one that sprung from the latter; all the others were the offspring of the former. The following table will fully illustrate the relation of the Teutonic languages to each other:

Germanic or Teutonic languages



The most educated among the German tribes were the *Goths*. They showed themselves receptive of Greek and Roman art and science; and, in the third century, adopted the Christian religion. They had, at that time, a number of heroic songs and sententious poems, but no written alphabet. In the 4th century, bishop Ulfilas translated the Latin Bible into the Gothic language, adjusting with great skill the Greek alphabet to the sounds of the Gothic words, and supplementing it with Latin and Runic characters. The Gothic Bible was the beginning of an interesting Gothic literature, consisting of theological, historical, and geographical writings. Unfortunately, the larger portion of this literature, in which all the nations of the English, German, Dutch, and Scandinavian tongues are equally interested, has perished. All that is extant, embracing considerable portions of the New Testament, some portions of the Old Testament, and a fragment of a paraphrased Gospel harmony, are given in the edition of Ulfilas by Gabelentz and Löbe (2 vols., 1843—1846), as also in those of Stamm (1858) and Bernhardt (1875); these editions contain a grammar and a dictionary; a Gothic glossary has also been published by Schulze (1848). Though few, the fragments of the Gothic language and literature suffice to give us a clear idea of their many excellencies. The language appears endowed with the luxuriant abundance of a primitive language, having a fullness of roots and a considerable but well regulated variety of inflections, derivations, and compositions. The short, original vowels *a*, *i*, and *u* still predominate, and the other vowel and consonantal sounds have mostly been preserved in unalloyed purity. Special case-endings distinguish the nominative, accusative, and vocative; there are different forms for dual and plural, and inflections for the passive. Like all the other Germanic languages, the Gothic has only two simple tenses, the present and the preterit, but, as a kind of compensation, a wonderful, euphonious and well regulated system of vowel modifications, which not only controls the strong conjugation, but pervades all the inflections and derivations. It already has, like the other Germanic languages, the weak inflection in nouns, adjectives, and verbs, which, in the High German, has been extended to larger classes of words. A pliant readiness to receive foreign words, a weakness common to all Germanic languages, appears also in the Gothic, which admitted a number of words from the languages of the Huns, Slaves, Greeks, and Romans, with whom they became acquainted during their migrations. Simultaneously with the Goths, others of the principal German tribes invaded the provinces of the decaying Roman empire, which finally succumbed to them; and on its ruins they established a number of new kingdoms in the south-western part of Europe. They, in turn, found it necessary to recognize the superiority of Roman education; and as, after their conversion to Christianity, the Latin became the language of the churches and schools, their own native tongues gradually gave way to the Latin, not, however, without leaving conspicuous marks in the new Romanic languages (q. v.), which were gradually developed in all these countries. The *Anglo-Saxons* alone among all the tribes which, at that time, set out from their native land for foreign conquests, preserved their language. Outside of this newly conquered territory, the further development of the German language was chiefly confined to the countries which, at the time when the migration of nations began, were inhabited by Germanic races. The languages of all these countries gradually developed into literary languages; and all of them are of interest to the English student, not only because they furnish the key to valuable literatures, but especially because they illustrate the growth of the English as a cognate language, and thus lead to a more comprehensive knowledge of it. By far the most important of them is the German. In Germany proper, the Low German and the High German co-existed side by side, but as a literary language the High German soon secured an ascendency which was generally recognized. In the development of this language, three great periods are distinguished: (1) of the *Old High German*, extending to the 11th century, in which the inflectional fullness of the language, in comparison with the Indo-Germanic languages of antiquity, and even with the Gothic, visibly declined; the vocative case, the dual number, and the inflected passive voice disappeared; and the variety of vowel sounds increased; (2) of the *Middle High German*, extending to the beginning of the 16th century, in which the decline of the inflections continued, the full vowel-endings were generally weakened into *e*, and the auxiliary verbs, the article, and the *umlaut* (modification of the vowel) were introduced; (3) of the *New High German*, in which the predominance of the vowel *e* in the final syllables was completed, and the quantity of words accordingly changed. The translation of the Bible by Luther introduced this period, and established the exclusive use of the High German as the literary language of all Germany. Opitz (about 1630), several linguistic societies, and Gottsched (about 1730) contributed much to the further development of the language, which, in the writings of Lessing and Goethe, fully attained its present form.

By the side of High German as a literary language, the Low German (*Plattdeutsch*) has maintained itself as the language of a considerable portion of the people even to the present day. It is not altogether without a literature; and, in the 16th century, even translations of the Bible into Low German were deemed necessary, in order to give to the entire population access to the Sacred Scriptures. The last edition of the Low German Bible appeared in 1622, showing that thereafter the entire German nation were sufficiently acquainted with the High German to regard it as the only literary medium of the country. In modern times, a literary cultivation of the Low German has been attempted, chiefly in poems and novels, in order to reflect, by using the people's own language, in the most natural and impressive way, the sentiments of the Low German people.—The Germans have no national academy of science, such as exists in France, possessing supreme authority in deciding questions relating to their language. There is, therefore, in German, as in English, a considerable difference in the mode of writing a large number of words and classes of words; and the authority of standard grammarians and lexicographers is appealed to in doubtful questions. As, moreover, the desire for a thorough revision of the entire German orthography has long been expressed on many sides, the Prussian government, in Jan., 1876, assembled a conference of 15 prominent German philologists to propose general rules, which are to be introduced, by order of the government, into the schools.

The foundation of German philology was laid, soon after the wars against Napoleon, by Benecke, the brothers Grimm, and Lachmann. Benecke established the philological knowledge of the Middle High German; though his chief work, the *Mittelhochdeutsche Wörterbuch* (3 vols., Leips., 1847—1864), was only a sketch which was subsequently filled up by W. Müller, jointly with Zarncke. The brothers Jakob and Wilhelm Grimm comprehended within the scope of their researches the whole of German philology. In accordance with the principles of comparative linguistics, which at the same time were applied by Bopp to the Indo-Germanic languages in general, Jakob Grimm gave, in his German grammar (*Deutsche Grammatik*, 4 vols., 1810—1837) a history of the changes of German words and of the simple sentence, through every period, in all the Germanic languages. The history of the German language (*Geschichte der deutschen Sprache*, 2 vols., 1848) supplements the above work, and shows the relationship existing between the different Germanic languages. The German dictionary by the two brothers Grimm (*Deutsches Wörterbuch*) was begun in 1852; it has been continued by Heyne, Hildebrand, and Weigand, but will not be finished until about 1890. It is, in point of scholarship, unsurpassed by any other work in the entire literature of dictionaries. Lachmann applied the principles of philological criticism, as they were in use in classical philology, to the study of German, restored the pure text of the master works of the Middle High German, and shed entirely new light on the history of German prosody. On the foundation laid by Benecke, the Grimms, and Lachmann, numerous hands have reared the edifice of German philology, which is now the admiration of the literary world, and has served as a model for similar labors in every other literature, particularly in the English. (See ENGISH, STUDY OF.) We can mention only a few of the immense number of valuable works relating to the German language which German scholarship has produced. A dictionary of the Old High German has been written by Graff (*Althochdeutscher Sprachschatz*, 6 vols., 1834—1842); a dictionary of the Middle High German, besides by Benecke, Müller, and Zarncke, who have already been mentioned, by Ziemann (*Mittelhochdeutsches Wörterbuch*, 1837); dictionaries of New High German (the present German language), besides by the Grimms, by Sanders (*Wörterbuch der deutschen Sprache*, 2 vols., 1860—1865, besides several smaller works), and by Weigand (*Deutsches Wörterbuch*, 3 vols., 1857 — 1865); grammars, besides by the Grimms, by K. W. L. Heyse (*Ausführliches Lehrbuch der deutschen Sprache*, 2 vols., 1838—1849); Rumpelt, *Deutsche Grammatik*, 1860); Heyne (*Kurze Grammatik der altgermanischen Sprachstämme*); Becker (*Ausführliche deutsche Grammatik*, 3 parts, 1836—1839). The latter, viewing language as an organism regulated according to strictly logical laws, attempted to lay a new foundation for grammatical science, and found a number of followers, but also a very determined opposition to some of his ideas by the historical school. Periodicals devoted to German philology, are Haupt's *Zeitschrift für deutsches Alterthum* (established in 1841, continued by Müllenhoff and Steinmyer); Pfeiffer's *Germania* (established in 1856, continued by Bartsch); and the *Zeitschrift für Philologie* by Hopfner and Zaches (established in 1870). Grammars of the Old High German and the Middle High German for the use of schools, embodying the results of the philological researches, have been written by Hahn (*Althochdeutsche Grammatik*, 4th edit., 1875; and *Mittelhochdeutsche Grammatik*, 3d edit., 1875). A bibliography of German grammars, from the earliest times to 1836, is given in Hoffmann's (von Fallersleben) *Die deutsche Philologie im Grundrisse* (1836). Outlines of the history of the entire German literature, have been written by Koberstein (*Grundriss der deutschen Nationalliteratur*, 1827); Vilmar (*Vorlesungen über die Geschichte der deutschen Nationalliteratur*, 1847); Wackernagel, (*Geschichte der deutschen Literatur*, 1851), The history of German Literature by Kurz. (*Geschichte der deutschen Literatur*, 4 vols., 1851—1872) gives well-selected specimens from all the prominent German writers.

The German language is the mother-tongue of about 92 per cent of the population of the German empire (in 1871, 37, 800,000), the remaining 8 per cent being Slaves, Danes, and French. In Switzerland, 14 out of 22 cantons are exclusively German; in the large canton of Bern, they are in a great majority (83 per cent); and of the entire population of Switzerland, about 69 per cent speak German as their mother-tongue. In Austria proper, German is the ruling language, although it is the mother-tongue of only 35 per cent of the population. In the lands of the Hungarian crown, German is spoken by about 11 per cent. Russia has a German-speaking population of about 700,000; in the three Baltic provinces, the entire aristocracy are Germans; and the German language, although spoken by only a small minority of the population, also prevails in the churches and schools, as well as in the literature. The two small German states of Luxemburg and Lichtenstein also speak German. England still owns the German speaking island of Heligoland. In the United States of America, a population, estimated at from 5 to 6 millions, to a great extent consisting of actual emigrants during the present century and of their children, and the remainder the descendants of emigrants of the 18th century, speak German as the family language, either equally with, or in preference to, English; but the use of German as the mother-tongue is steadily receding before the advance of the English. The entire population of the world speaking German as the mother-tongue may be estimated at about 60 millions, the German being, in respect to the number of those who speak it, only inferior, among the languages of civilized nations, to the English.

The method of studying German, in English and American universities, colleges, seminaries, and academies is about the same as that pursued in the study of French. The statements made in the articles *French Language* and *Modern Languages* are, more or less, applicable to the German, in regard to the place which it occupies in the course of instruction, and to the mistakes which, in this respect, are very frequently committed. The most important feature which broadly distinguishes the German language from the French, and which an intelligent teacher will always keep in view from the very first lesson he gives, is the close resemblance between German and English words, especially those used in common life. English philologists have calculated that the English language, as commonly spoken and written, consists, to the extent of five-eighths, of Anglo-Saxon words, and that among these are found nearly all the terms of common life. Many of these words are spelled exactly alike; large classes of other words show so slight a modification, that the pupils recognize them at once (as *Vater*, *Mutter*, *Bruder*, *Buch*, *Haus*), and still others present changes made according to certain laws which are easily understood, even at the earliest stage of instruction, and by the most youthful beginner (as *zehn*, ten; *Zinn*, tin; *Tag*, day; *sagen*, say). By a skillful use of this extensive resemblance of the two languages, the intelligent teacher has it in his power to give to the beginner, in a few lessons, the command of a very large number of words. The strange letters which seem to surround the first lessons in German with considerable difficulty, are quite easily learned by the aid of words which are substantially the same in German as in English. Whole German sentences can, in this way, be at once understood; and when translation forms a prominent object of the study, the pupil should begin to translate from German into English, as soon as he knows the letters. For exercise in the declensions and conjugations, the selection of cognate words for the paradigms likewise facilitates the progress of the pupils. In this part of the grammar, German at once seems to the beginner to be more complicated than English, and presents to him the greatest difficulties he has to surmount; among which may be enumerated the following: (1) The noun in German has four cases, and the plural is formed in four different ways as far as its termination is concerned, besides modifying the radical vowel; (2) Adjectives and adjective pronouns are declined in three different ways; (3) The past participle generally adds the prefix *ge*, and, in compound verbs, this prefix, in many cases, is placed between the verb and the particle with which it is compounded, or the particle is detached and placed at the close of even a long sentence. In constructing exercises for the study of these differences, it will again be found a help to choose for the paradigms words similar to English words, or such as are common to both languages, so that the attention of the pupil may be concentrated upon the learning of the inflectional peculiarities. It is, however, not only the resemblance of German and English words, but also other points of similarity, in the etymology of the two languages, that should be made use of. Thus the possessive case of English nouns may be made to illustrate not only the German genitive, but the entire declension, of which the English possessive is a remnant. A reference to the plural forms *men*, *women*, *feet*, *geese*, *mice*, will explain the modification of a large number of German nouns in the plural; as will also such forms as *children*, *brethren* and *pence*. The fact that the division of verbs into *strong* and *weak* is the same in both languages, that the formation of the principal parts of both is similar (*see, saw, seen—seh-en, sah, ge-sehen; love, loved, loved—lieb-en, liebte, ge-liebt*), and that even, as a general rule, the same verbs belong, in both languages, to the one or to the other conjugation, is easily comprehended even by beginners, and greatly assists them to understand the structure of the foreign language.

The comparison of the German language with the English should not be limited to the points just mentioned; but all the peculiar features of German should be noticed. In the study of any foreign language, a clear understanding of the most conspicuous characteristics helps to fix in the mind a clear conception of the language. Among the features of the German grammar to which special attention should be called, when they are met with for the first time, are the following: (1) The gender of nouns is arbitrary, and many nouns that are neuter in English are either masculine or feminine in German; (2) One or more long qualifying adjuncts may intervene between the article and its noun; (3) The order of sequence of auxiliary verbs is entirely reversed in subjunctive propositions; (4) Prepositions and verbs govern three different cases of the noun; (5) The object precedes the verb more frequently than in English.

The correct pronunciation of German, as of every foreign tongue, must be learned by imitating the teacher. This is especially the case with the sounds that have no equivalent in English, as *ö, ü, ch*, the guttural *g*, short *o*, *r*, and the combinations of *sp* and *st*. Their number is comparatively small; and, if they are steadily practiced, it will require only a short time to learn to enunciate them correctly. After a rudimentary knowledge of the language has been attained, special attention should be given to the laws according to which derivatives and compounds are formed. The German has greater freedom in forming compounds than almost any of the other modern languages; and, as this is liberally used by many writers, no dictionary is so complete as to contain all the compounds to be met with in modern German writers. As the radical and component parts of these words are, however, easily recognized, and, as but few of the words in common use are of foreign origin, it is easy for students of German to understand all such derivatives and compounds. This is still easier, when, as is the case with most compound verbs, each of the component parts has an equivalent in English; as *abhalten*, to keep off; *ausgehen*, to go out, etc. If we consider that, for a conversation on every-day subjects, a knowledge of some 600 or 700 words is generally found to be sufficient, the close resemblance of roots, derivatives, and compounds, in German and English, will be seen to afford advantages for proficiency in German conversation of which no teacher can fail to make use. Progress in reading the language will also be greatly promoted, if the teacher, besides calling attention to the large number of common roots, derivatives, and compounds, traces words which appear to the beginner as entirely strange, to English words of the same root. Thus, if students learn that *jener* is etymologically related to *yon*, *Knabe* to *knave*, *schön* to *shine*, *Blume* to *bloom*, *Hund* to *hound*, though they translate them by *that*, *boy*, *beautiful*, *flower*, *dog*, they will remember their meaning more easily, and, by means of every new word of this class, get a clearer view of the near kinship between the two languages. It is safe to say, that the importance of an etymological comparison of German and English is not yet sufficiently appreciated by teachers of German, and that greater attention should be paid to it in German classes of all grades.

The rich and charming juvenile literature of Germany affords an abundance of suitable reading lessons, as soon as the pupil has sufficiently advanced in the knowledge of words and grammatical forms, to take up a *First German Reader*. Anecdotes, fables, tales, and pieces of didactic poetry present the smallest difficulties to beginners. The readers published by Comfort, Worman, Schlegel, Henn, and others, contain a large number of selections adapted to the wants of beginners. The attentive teacher will, however, find it necessary to select, especially during the first months, exercises with short sentences only; since the length of the sentences in many, even of the juvenile writers of Germany, presents difficulties which, at an early stage of the instruction, should be avoided. There are scarcely any German books which, like *Télémaque* and *Charles XII* in French, can be put into the hands of beginners; but *First Readers*, containing selections from a number of writers, are for this purpose in general use. Advanced students should either use a fuller German reader, prepared for advanced classes, or take up the work of one of the classic writers. In the latter case, Schiller and Goethe are, for good reasons, invariably preferred. Annotated editions of some of the plays of both these poets have been specially prepared for the use of American and English schools. Special dictionaries for one or more plays are not only superfluous; but, when a student has access to a general dictionary, the use of the latter is much to be preferred. When students are able to read authors like Schiller and Goethe, the teacher may properly use the reading lessons not only to improve the student's knowledge of the language, but also as an introduction to the history of German literature. The German readers for advanced classes might advantageously be so arranged as to afford to the teacher an opportunity to acquaint the pupils with the foremost writers in the different departments of German literature. In this respect there is room for great improvement in the readers now published.

In the United States, German is not only generally taught in universities, colleges, seminaries, and academies, but more recently the study has been introduced to a great extent into the public schools, in some extending to the lowest primary class. This is due to the fact that a large part of the population consists of Germans who are generally desirous that their children should be taught the German as well as the English language, besides to the desire of many school boards, to draw this class of children, as largely as possible, from private into public schools. This practice has been gradually extended until, in 1876, a majority of the large cities of the Union,—among them New York, Rochester, Jersey City, Pittsburgh, Cincinnati, Cleveland, Chicago, Milwaukee, St. Louis, Louisville, and a number of smaller ones, had made provision for it. In that year, the mayor of Brooklyn, in his message to the city council, strongly recommended the introduction of German as a branch of instruction in the public schools of that city. The greatest variety thus far exists in the courses of instruction that have been adopted for this study. In some places, especially in the smaller towns where the German-speaking people constitute a majority of the entire population, it has been made a part of the regular course, in which all children must take part. In most places, it is optional with the children to pursue this study or not. In some cities (Cleveland, Cincinnati, St. Louis, and others), the school boards have arranged different courses for children who come to the public school with a speaking knowledge of the German language, and for those who have not this knowledge. The instruction of the former begins in the lowest class of the primary department, the time in the primary classes being equally divided between the two languages. Very many American educators advocate the study of German by Anglo-American children of the common schools, on the ground that the elements of English grammar will in this way be learned more easily and more thoroughly. That, from practical considerations, many parents desire an opportunity for their children to learn this language, seems to be proved by the large proportion of children who pursue the study, even when it is entirely optional. The testimony of some of the superintendents of schools in which this instruction has been given for years is quite emphatic in its favor. Thus, in his *Annual Report*, for 1874, the city superintendent of New York said: "No other consideration than its usefulness as a branch of American education should have, in my judgment, any weight in continuing or extending German instruction; and, within this limit, I believe sufficient reasons exist, not only to justify, but to recommend it strongly as a part of our course. In the schools in which it has received the most earnest attention, and in which, consequently, the best progress has been made, no indication has been presented that this branch of study has at all retarded the progress of the pupils in their English studies, but that it has rather facilitated intelligent advancement in English grammar and composition, increasing the pupils' fluency of expression by giving them a more precise knowledge of the meaning of the words of their own language, and aiding, in an important manner, in their mental training and development." A committee of the board of education of the city of New York, in Dec., 1874, remarked, in their report of that date: "The more effective this department of instruction is made, the more successful will our system be in this respect, and the more nearly shall we approach to that desirable consummation of bringing under the influence of our common schools the children of all classes of our people, as well as of every nationality and creed. The importance of this consideration will be obvious in view of the fact that at least 11,000 German pupils are in daily attendance at the Catholic Parochial, Lutheran, and German private schools." The superintendent of the public schools in Cleveland, in a special report, dated Feb. 22., 1875, said: "The study of German was introduced into the grammar and primary schools of Cleveland in the spring of 1870, since which time the number of pupils pursuing the study has increased from 600 to 5,000. Nor has this rapid increase in the study of German had any effect to 'retard the general course of study,' or, in other words, the progress of the pupils in reading, writing, arithmetic, geography, and the other English branches, as they are sometimes called." And he further remarked, that "the chances for promotion" were found to be equal among the pupils pursuing exclusively English studies and those who studied German as well, and added, "If now we take into account the fact that the latter goes from the school possessed of a good knowledge of a language that opens to him the literature and scientific records of a great people, who can doubt but that the advantage lies on the side of the study of German?" In St. Louis, the study of the German language was introduced in 1864, on the report of a committee of the board of education, who recommended its introduction on the following grounds: (1) "That by such introduction a homogeneousness of feeling would be created between the native and foreign born;" (2) "That the study of German would naturally assist the study of the English language;" (3) "That the knowledge of the German language pecuniarily benefits those who speak it." During the ten years preceding the last report of the schools of that city (1874—5), the number of pupils pursuing the study of German had increased from 450 to 17,197, of whom 5,670 were Anglo-Americans. This was 73 per cent of all the pupils attending the public schools. In regard to this, the superintendent of schools, in his report for 1873—4, stated, "A perfect mingling of the different classes of population in our schools has been the result, and the fact that one-third of the entire number who have taken up the study of German are Anglo-American children (*i. e.*, children of Irish or native American parents), shows how completely this feeling of caste has been broken down. The population has, in fact, grown homogeneous during the past eight years by means of the introduction of German into our public schools."

On the other hand, the admission of German into the public schools has been opposed on the ground that the public school should exclusively teach the national language, and that the exclusion of all others will tend to promote the consolidation of all the people of the United States into one compact American nationality. In some of the large cities, the difference of opinion on this subject, on the part of school officers, has led to vehement and protracted discussions, as well as to considerable vacillation in the school legislation regarding it. In some of the western states, as Ohio and Indiana, the state law provides that, when in a school district a certain number of parents desire the introduction of German into the course of study, it must be introduced. A considerable portion of the German-speaking population still prefer to send their children to schools in which the German language is either the exclusive medium of instruction, or shares this position with the English. (See GERMAN-AMERICAN SCHOOLS.)

GERMAN WALLACE COLLEGE, at Berea, Ohio, under the control of the Methodist Episcopal Church, was founded in 1863. The professors are all native Germans, educated at German universities, and the instruction is given in German. It is patronized by many Americans for instruction in German. By agreement, the students have free access to all the classes of Baldwin University. The college is supported by tuition fees and partly by the interest of an endowment fund of $38,982. The scholarship funds amount to $19,455. The tuition fees vary from $13.50 to $27 per year. It has a preparatory and a collegiate department, with a classical and a scientific course, a theological course, and special courses in English for Germans, and in German for Americans. In 1875—6, there were 4 professors and 117 students (103 males and 14 females), of whom 47 were in the preparatory department. The Rev. William Nast, D. D., has been the president from the opening of the college.

GERMANY. Anterior to 843 A. D., Germany was a part of the great Frankish empire of Charlemagne and his immediate successor; but in that year, by virtue of the treaty of Verdun, it was separated from the remainder of the great Frankish dominions, and was given to *Ludwig* (Louis), surnamed the German, a grandson of Charlemagne. Until 1806, Germany was an elective monarchy with the official title of the "Holy Roman Empire of the German Nation" (*das Heilige Römische Reich deutscher Nation*). The French subjugation of the greater part of Germany put an end to the first German empire. After the dethronement of Napoleon (1815), the Congress of Vienna re-established Germany as a loose conglomeration of sovereign states (*Deutscher Bund*), under the permanent presidency of Austria in the federal diet. This feeble union of the German states was dissolved by the war, in 1866, between Prussia and Austria, and their allies, which ended with the complete discomfiture of Austria and her withdrawal from the Germanic confederation. Prussia then united all the states north of the Main river into a close political union, the North German Union, and formed treaties of alliance with the three states of southern Germany, by virtue of which the king of Prussia had supreme command of the united armies of all Germany in case of war, besides the permanent presidency in the federal councils of the North German Union. The successful war against France, in 1870—71, led to the formation of the present German empire. The south German states joined the North German Union, and the King of Prussia, as permanent and hereditary president of the whole German confederation in all federal affairs, and as supreme commander in chief of all the state contingents in time of war, at the request of all the German princes and free towns, assumed the title of German Emperor. The official name of the confederation is the German Empire. The several states composing the confederation retain their autonomy in all internal civil affairs not regulated by federal legislation. Federal affairs are: Army and navy, foreign diplomacy and political representation, the tarif, the postal service, the mint, weights and measures, and the supreme commercial court (at Leipsic). Railroads, telegraphs, legal proceedings, and educational interests, it is contemplated, will also be brought under the federal government, the measure being now under consideration (1876). Bavaria, however, has retained certain prerogatives in regard to her army, her postal service, and her internal taxation. The federal parliament consists of two houses,—the upper house: the federal council (*Bundesrath*), consisting of the federal commissioners appointed by the several state governments; and the lower house (*Reichstag*), consisting of 383 members, elected by the direct suffrage of the people. In the federal council Prussia casts 17 votes, Bavaria 6, Saxony 4, Würtemberg 4, Baden 3, Hesse 3, Mecklenburg-Schwerin 2, Brunswick 2, and each of the lesser states 1 vote; 58, in all. The chancellor of the empire is the chief executive and responsible officer of the confederation. The emperor is required to convene the parliament at least once every year. The German empire comprises 26 states; namely, 4 kingdoms,—Prussia, Bavaria, Saxony, and Würtemberg; 6 grand duchies,—Baden, Oldenburg, Mecklenburg-Schwerin, Mecklenburg-Strelitz, Hesse-Darmstadt, and Saxe-Weimar; 5 duchies,—Brunswick, Anhalt, Saxe-Altenburg, Saxe-Coburg-Gotha, and Saxe-Meiningen-Hildburghausen; 7 principalities,—Lippe, Schaumburg-Lippe, Waldeck, 2 Schwarzburgs, and 2 Reusses; 3 free towns,—Hamburg, Bremen, and Lübeck; and 1 federal district,—Alsace-Lorraine. The empire has an aggregate area of 208,745 square miles, and a population of 42,757,812, according to the census of Dec. 1., 1875.

Educational History.—Germany, which for several generations has held a very high, if not the leading rank among all the civilized nations of the world in regard to public education, has risen to its present high standard from an exceedingly rude condition, and can refer to a long and intricate history of the development of its educational institutions, extending over a period of more than a thousand years before the present time. The German tribes dwelling within the limits of the present German empire were successively converted to Christianity, from the 6th to the 9th century, irrespective of sporadic conversions anterior to the beginning of that epoch, the Franks being the first, the Alemannians and Bavarians the next, followed by the Frisians, Hessians, Thuringians, and the Saxons, who were the last to adopt the Christian faith. Beyond the Elbe river, in a region inhabited at that time by Slavic tribes, now thoroughly German, Christianity did not gain a foot-hold previous to the 9th and 10th centuries, and in some districts (Lithuania, for example), not until a still later period,—from the 11th and 12th to the end of the 14th and the beginning of the 15th century. Charlemagne, the mighty Frankish king, who had converted the sturdy Saxons to Christianity, by the aid of fire and sword, was the first to sow the seeds of education in Germany; and although without early instruction, manifested the greatest interest and energy in the establishment and furtherance of educational institutions within the limits of his empire, remaining faithful to his purpose until his death, in 814. With the assistance of Alcuin, whom he had invited from England, he established the first school in his empire, the *Schola Palatina*, or court school, chiefly intended for the education of the royal children, of whom Charlemagne had fourteen: and the great monarch himself was not ashamed to acquire, in his ripe years, what had been neglected in his earlier education. The great monarch spoke Latin, understood some Greek, and preferred social intercourse with the circle of learned men whom he had assembled at his court, to every other. He also evinced much interest in the introduction of the arts of architecture and music, and invited talented men, especially from Italy, to take up their residence in Germany near the imperial court. Other schools were established after the plan of the *Schola Palatina;* and the *artes liberales*, divided into a *trivium* (grammar, rhetoric, and dialectics), and a *quadrivium* (geometry, arithmetic, music, and astronomy), constituted the principal subjects taught. Besides these, there were schools of a lower rank, in which the curriculum of study comprised only reading, writing, arithmetic, grammar, and music. Very soon a distinction between ecclesiastical and secular schools was established, although Charlemagne endeavored to obliterate all differences of rank in educational matters. Those pupils who wished to study for the priesthood, studied the *trivium* and the *quadrivium*, in *scholis intrariis, seu claustris* (convent schools), while the same studies were pursued by all others in *scholis exterioribus, seu canonicis*. The driest formalism was a characteristic feature of all these schools. The convents and the cities, as they sprung into existence all over the empire, became the originators of educational institutions; the former being the founders of convent and cathedral schools; the latter, of Latin and city schools. (See CATHEDRAL SCHOOLS, and CONVENT SCHOOLS.) Prominent among the convent schools, was the one founded by the famous Abbot Rhabanus Maurus at Fulda, 813, which is still in existence as a *gymnasium*. Its founder was called *primus præceptor Germaniæ*. He was a profound scholar, and his name is handed down to posterity as one of the greatest educators of his age. His successor was the equally renowned Walafried Strabus. These schools, however, did not maintain their high standard of excellence for a long time, partly because their prosperity depended in too great a measure upon the immediate influence and energy of their founders, and partly because the pure and apostolic ardor of the earlier Christian church, from which they had received their life-breath, gradually relaxed and declined. Deprived of the strict and immediate supervision of the bishops, monastic learning and discipline soon deteriorated; and, although the mendicant orders of the Franciscans and Dominicans largely increased the number of convent schools, their educational work did not compare favorably with the standard previously maintained. Secular Latin schools were established by the municipal authorities in cities at a somewhat later period; but, at first, they had to encounter many difficulties, arising from the opposition of the clergy, who claimed the sole right of establishing and conducting schools of a higher order,—those in which more than the mere rudiments of education was taught. Still, by perseverance, a number of cities succeeded in founding their own schools of a higher order, independent of the immediate supervision of the church. Among the oldest of these city Latin schools, may be enumerated those at Breslau (Silesia), which were founded in 1267 and 1293, and which still flourish as *Gymnasia*. As a matter of course, the teachers could only be taken from the ranks of the clergy; and the convent schools furnished, in general, the models for their course of studies and general government. These city schools were placed under the direction of a *scholasticus*, usually a clergyman, whose appointment was generally for the term of one year, but could be renewed. The *scholasticus* was assisted by a number of *baccalaurei* of his own appointment. The course of studies consisted chiefly of Latin grammar, music, and, to a limited extent, rhetoric, dialectics, and scholastic philosophy. It is obvious that these city schools, as well as the convent and cathedral schools, were under the direct influence of the clergy, and that the studies therein pursued had the closest relation to the immediate purposes of the church. Although Latin, and in some schools Greek also, was studied with the greatest zeal, these studies did not disclose to the scholars the ever fresh and humanizing spirit of the Roman and Grecian classics; but, under the driest conceivable formalism of instruction, merely served, especially the Latin, as the aid and support of a scholasticism, which, notwithstanding its depth and speculative ingenuity, was of little value, being unproductive of the best results of education, according to its true meaning.

School education in Germany was so firmly held in subjection to church interests that its working was confined to a blending of dry scholasticism and religious mysticism, and devoid of all practical philosophy and true pedagogical principles. The conquest of the Byzantine empire by the Turks, the subsequent exodus of many Greek scholars from the centers of learning in the Orient to the west, their infusion of new views and ideas into the decaying system of European scholasticism, revived the study of the ancient classics, and a just appreciation of their ever true and youthful spirit. Italy, first of all, received these fresh germs for the development of free and humanistic conceptions, the further advance of which to western and northern Europe laid the first foundation for the subsequent reformation of the Church. This is especially true of Germany. The Netherlands, at that time a part of the body politic of the German empire, by means of the greater activity in political life, which brought the best minds of the people in conflict with one another, partly on political, partly on church questions, became the nursery, so to say, of a new era in education. Gerard Groot (1340—1384) became the founder of a new school. Having studied scholastic philosophy for several years at Paris, and become deeply imbued with the advanced ideas in matters of education, he gathered around himself a number of spirited men, whose aim was to combine with correct religious principles a practical and scientific activity. Of Groot's followers the most noted were Florence Radewin, the celebrated Thomas a Kempis, and Johann Wessel. They were the founders of the so-called *Brüder-Häuser* (brothers' houses), in which they taught, besides the traditional religious scholastic subjects, sciences and languages according to the new Italian plan. The new school spread its principles over the Netherlands and northern Germany generally. Rudolph Lange, more especially, became a reformer of the prevailing educational system. He established or remodeled existing schools, after the plan of those of Deventer and Amsterdam, throughout northern and north-western Germany. Other reformers in the same work were Count Moritz Spiegelberg, Rudolph Agricola, Ludwig Dringenberg, Ludwig Wimpfeling, Conrad Celtes, Johann von Dalberg, but above all Johann Reuchlin (1455—1522) and Erasmus of Rotterdam (1467—1536). The study of Greek and Hebrew was particularly advocated by Reuchlin, while that of Latin found a stanch supporter in Erasmus; and their efforts prepared the educated classes of Germany to receive and ripen the germs of the great reformation of the Church which was inaugurated at that time. The Reformation imparted a new and vigorous spirit to education. The great reformers advocated strongly the study of classic antiquity, not only for the development of rhetoric and a taste for scientific subjects generally, but also, and principally, as important aids in the establishment of true evangelical faith. The necessity of founding schools for the maintenance and propagation of the new faith was strongly pressed by Luther in several of his writings. The course of instruction followed in these Latin schools comprised, mainly: reading, writing, vocal music, Latin, dialectics, rhetoric, and religion. These schools were generally divided into three classes, in which the gradation of studies was as follows: reading, learning of Latin vocables, and reading of Donatus and Cato's *Sententiæ*, in the lowest class; religion, grammar, prosody, music, and selections from Æsop, Mosellan's *Pædologia*, Erasmus's *Colloquia*, Terence, Plautus, and the Holy Scriptures, in the second class; Virgil, Ovid, Cicero's *De Officiis* and *Epistolæ ad familiares*, metrics, dialectics, and rhetoric, in the highest class. Latin composition and colloquial exercises formed an essential part of the curriculum of the higher grades. The school hours were, on every week-day, from 5 or 6 o'clock to 9 o'clock in the forenoon, and from noon to 3 o'clock in the afternoon. Christian catechism was taught twice a week during week-days, and every Sunday. The maxim *Repetitio mater studiorum* was exacted with great rigidity. The singing classes of these schools were obliged to sing, under the direction of the music-teacher, before the houses of wealthy citizens on high church days, for the purpose of collecting alms. The city schools, at the time of the Reformation, were either of a lower or a higher order; the latter were, however, almost exclusively in the more important cities of the country. Reading, writing, Latin, and religion formed the principal subjects of instruction in the former, to which were added Greek, Hebrew, mathematics, and philosophy in the latter, or higher order of city schools. Both orders of schools commenced on the same basis, the principal difference between them consisting in extra courses for special studies, introduced in the higher order of these schools, which besides the studies enumerated above, also taught rhetoric, logic, and, as a matter of course, music. In some schools, Hebrew, and mathematics were omitted in the course of studies. These higher city schools, and a considerable number of convent and cathedral schools, the latter especially during the period of the Reformation, were transformed into so called *Gymnasia*. The *Gymnasium* consisted originally of four classes, which number was subsequently increased to five, and in some instances even to eight classes. The number of school hours for each class varied from 20 to 22 per week. Some of these institutions, in course of time, rose to the dignity of universities.

We find, throughout the middle ages, in most of the city schools, four hours of daily instruction. However, there were some schools with five, some with three (Spires, 14th century) one with only two (Halle, 1526); while, on the other hand, we find as many as eight hours *per diem* for the upper classes of the Latin school at Esslingen (1548). The recitations were generally divided equally between the forenoon and the afternoon. The number of classes in the schools varied from two to four and upward, with proper subdivisions. The school year commenced, in a number of cities, regularly on March 12., the day of St. Gregory, the patron-saint of schools. In other cities, admissions were allowed twice a year,—at Easter and Michaelmas. The schools were not free schools; pupils, except the children of paupers, were required to pay a certain fee per quarter, varying in amount according to time and locality. In some places, the school money was fixed according to an agreement between teacher and parents. Teachers received, most generally, a salary from the municipality, besides the pupils' fees, and enjoyed other emoluments, for assisting at divine service, funeral processions, &c. Presents to teachers from pupils were very customary, and in some cities were even prescribed and regulated by the authorities. Of school examinations, in the proper sense of the term, there is no trace, although we read of occasional visits to the schools by prelates; nor is there any trace of vacations. The earliest ordinance instituting vacations is found at Freiburg (1558), which limits the fall vacation to two weeks. School was kept throughout the year, in some cities not even excepting holidays, *e.g.* in Nuremberg, Landau, etc.; but teachers and pupils could agree upon one or more holidays, mostly in consideration of a fee to be paid to the former. School festivals were not frequent. The day of St. Gregory was very generally observed as a holiday. A peculiar festival was the *Virgatum-gehen*, the gathering of birches in the woods by the pupils, for their own corporal punishment at school, amid general frolic, including procession, singing and instrumental music. The application of the rod was the principal means of maintaining discipline in the schools, the more necessary, as large numbers of vagrant scholars (*fahrende Schüler*), who went, sometimes begging, from place to place to attend school, and who were addicted to all manner of vices and irregular habits, infested the whole of Germany throughout the middle ages, and rendered strict school discipline a very difficult task. Corporal punishment with the rod was not only officially recognized but minutely regulated by municipal legislation, even designating upon which part of the body, excluding head, back, and hands, the chastisement should be administered. We find that, in Heidelberg, the teacher of a Latin school was dismissed, in 1567, because he refused to flog his pupils on the ground that some of them were 19 years of age, and, therefore, in his opinion, too old for such punishment. Another peculiar mode of punishment was that of the *asinus*, a wooden frame in the shape of a donkey, which the culprit was obliged to mount in face of the class, as a punishment for minor offenses. There were several kinds of *asini*, according to the character of the offence: an *asinus morum, garrulitatis, et strepitus*, for disorderly conduct; an *asinus Germanismi*, for pupils who spoke German instead of Latin; and an *asinus solœcismi*, for offenders against good Latin grammar. There are perceptible, at this period, many serious defects in the system of instruction, more especially a great want of uniformity, of harmony in the intellectual and moral training, of rational methods, suitable text-books, and of competent instructors. Many of the school-men of that time rose to great distinction. Neander, Friedland (Trotzendorf), Bugenhagen, Spalatin, Lindemann, Wolf, Fabricius, Rhodomann, Boëtius, Caselius, Calixtus, Camerarius, Hessus, Heyden, Helwig, Nigidius, Goclenius, Jungmann, and others, but especially Johann Sturm, are noted as prominent educators in their time. Sturm not only gained wide-spread renown as an author of many Latin works on pedagogics, but also as a practical educator. His famous school at Strasburg (1578) contained several thousand scholars, including the best elements of society, many being scions of the high nobility, and even princes. This school had not only a German national fame, for representatives of all the European nations flocked thither to sit at the feet of the celebrated educator. Besides the school at Strasburg, Sturm established many others, either personally or by means of his scholars. Christianity, a good knowledge of the sciences, and eloquence, were the principal aims of his education. He laid down a system of education for youths from the seventh to the twenty-first year of age. From the seventh to the sixteenth year, he ordained a strict school education, after which he permitted a somewhat freer course of instruction by lectures. His established curriculum of studies was very carefully carried out, from the very foundation to the perfect mastery of pure Latin speech. Still, every thing considered, his system was only a one-sided formalism, devoid of that harmony of intellect and heart, which is the aim of true education. The *academy*, connected with the *gymnasium*, after Sturm's plan, approached, but did not entirely reach, the standard of a university. While the Reformation planted and developed many educational institutions of a superior character, the Jesuits, aiming to keep the schools subservient to the interests of the Roman Catholic Church, did not relax in their endeavors to build up rival institutions. In this special branch of their general purpose to encounter and combat Protestantism, they have been successful in a remarkable degree. The founder of the Jesuitic system of school education was Claudio de Acquaviva (died in 1615). Occupying the high position of general of his order, he exerted the greatest influence in the erection of Jesuit schools, which, through the energetic activity of the order, spread rapidly over the whole European continent, but were solely guided by hierarchical interests. Their educational aims were chiefly confined to the pursuit of scientific and humanistic studies; but, at the same time, an almost absolute want of individual freedom of thought, and a blind subserviency to established authority, were their most prominent general characteristics. These institutions were divided into two classes,—a higher and a lower order. The latter were divided into five subdivisions, and principally taught reading and writing, in Latin. Other studies, commonly comprised in a *gymnasium* course, were greatly neglected, although mentioned in the plan of studies; such as mathematics, natural philosophy, geography, and history. Rhetoric and logic were taught in the driest possible manner; and even the favorite Latin was wanting in thoroughness of grammatical instruction, and in a historical or critical explanation of the classic authors. The memorizing of disjointed phrases from Cicero's writings, and of Virgil's and other poets' works, formed a prominent part of the scholar's *pensum*. Implicit obedience to superiors, the fear of God, and virtue, were the chief aims of Jesuitic education. The speaking of German was prohibited, the denunciation of offenses against the established rules was invited and encouraged, the love of country and of family was gradually extinguished in the hearts of the scholars, and nothing remained but the love of the established church, and the strictest obedience to the superiors of the order.—The maxims of Sturm and other prominent educators of the Protestant school remained the acknowledged models for the government of secular schools, for a long period of time, especially in Würtemberg, Saxony, and Hesse. Bebel (died 1516) in Tübingen, and Reuchlin (died 1522), devoted great attention to the promotion of the study of the ancient languages; the former especially in regard to Latin, the latter in regard to Hebrew and Greek. The study of the mother-tongue was officially ignored, if not suppressed. The ordinances of Duke Christopher of Würtemberg (1559) encouraged the establishment of Latin schools within his dominions. With the exception of the positive neglect of the German language, the general course of instruction was excellent; and, in its general characteristics, has been maintained until quite recent times. The prescribed curriculum of studies pursued, is still extant in every detail, commencing with the rudiments of Latin instruction, and terminating with Cicero's orations, Sallust, Livy, and Virgil's *Æneid;* dialectics and rhetoric according to Melanchthon's plan; Greek grammar and Xenophon's *Cyropædia*. Music was, and remained, a favorite study in all the grades. With slightly varied modifications, this general plan of studies, as established in Würtemberg for secondary institutions of learning, was adopted, toward the close of the 16th century, as the standard in Saxony, with the only exception that more attention was given to arithmetic. The celebrated princes' schools (*Fürstenschulen*) at Meissen, Grimma, and Schulpforta, were of a somewhat higher order. They each had three classes with a two years' course in each, and prepared scholars for all the academic studies. The highest class comprised the following studies: Melanchthon's Latin grammar; Cicero's *De Officiis*, *De Senectute*, and *De Amicitia; Tusculanæ Quæstiones;* Virgil's *Georgics* and *Æneid;* Horace's *Odes;* Isocrates; Pythagoras's *Aurea Carmina;* Plutarch's *De Liberorum Educatione;* the *Iliad;* the rudiments of Hebrew; dialectics and rhetoric; the rudiments of astronomy, etc. Terence's and Plautus's comedies were acted annually to accustom pupils to Latin speaking. This course of studies was also introduced in several other German states. Erasmus of Rotterdam and Melanchthon had, both, strongly advocated a certain attention to realistic studies,—mathematics, astronomy, and the natural sciences in general. Luther also favored this view. Still, these studies remained much neglected, and did not receive due attention until the following century, when the climax of one-sided formalism had been reached, and a counter-current made itself felt in the educational world. Francis Bacon (q. v.) was the originator of the realistic principle in education; and he found enthusiastic disciples in Wolfgang Ratich (1571—1635) and John Amos Comenius (1592—1671), who became the founders of a new realistic method fo education in Germany. They principally aimed at a development of the reasoning power of the mind; but, in their zeal, they carried their aim too far, by almost entirely ignoring fancy and the appreciation of the beautiful. They failed to find the proper blending of mere instruction and general culture; but, notwithstanding their want of appreciation of classic antiquity and historic study, they are entitled to a grateful recognition as the founders of a realistic school which exercised a very beneficial influence upon the educational principles of their country.—Soon afterward, the whole German nation was shaken to its very foundation by the great denominational feuds between the Protestants and the Catholics, in which the schools also participated. Theological disputations were the order of the day; and the Latin schools, every-where in Germany, were diverted from their original pursuits, which were merely educational, to become centers of public disputations and declamations for or against Rome and the papacy. The religious dissensions finally culminated in the Thirty Years' War, which rent the German nation into two bitterly hostile parties, and with fire and sword, during an entire generation, devastated and depopulated the country, and almost entirely destroyed what civilization, and mental, moral, and material culture, had built up in centuries. Germany, which, before the war, had been in a most prosperous condition, with a population of about twenty million inhabitants, was reduced to a vast desert with scarcely over five million people. The war had swept away the very flower of the nation, leaving, at its termination, the once mighty empire in an impoverished, helpless condition, an easy prey to the schemes and aggressions of foreign powers. In the general state of exhaustion and demoralization, during, and at the close of, the war, the educational institutions of the country were almost entirely annihilated. A great number of the schools were closed for want of teachers and pupils, very many of them were destroyed, teachers and pupils were scattered, and an enormous increase of immorality was perceptible among the students of the few schools which survived. The peace of Westphalia (1648) found the educational institutions of Germany in a most forlorn and demoralized condition. Gradually, however, they regained their former standard; but the course of studies formerly prevailing had, in the mean time, undergone very material changes. Latin, which had almost become the ruling speech in the higher schools, began to lose its pre-eminence. It was still studied,with great attention; but the national language began to assert its importance, and even at the universities, the German tongue was gradually permitted to become the medium of scientific instruction. This reaction from the former principles of education continued throughout the following epoch. The study of Greek, at some noted schools, became entirely neglected. At this period, a marked difference was manifested in regard to the education of scholars of noble birth and others. The so-called knights' academies (*Ritterakademien*) were established, in which pupils were instructed in history, genealogy, and heraldry, and in which dancing and courtly manners were special branches of instruction. Other studies, such as military and civil engineering, astronomy, botany, and theoretical and practical philosophy, found their way into the regular curriculum. Generally speaking, there was, however, no true advancement in the educational standard; on the contrary, the selection of studies manifested great arbitrariness on the part of the patrons and directors of schools of an advanced order. In some of the German states, the special interest of highly cultured princes in matters of education tended to elevate the standard by not only grounding the scholars well in the mechanism of the classic languages, according to the old maxim of dry scholasticism, but also by making them thoroughly acquainted with the spirit of classic authors. The study of the Greek classics was rehabilitated, together with Hebrew, and other more liberal kinds of culture. Duke Ernest of Gotha (1675) took a leading part in this reformation of the higher schools, and his example found many imitators in other German states. Still, there prevailed a great diversity in educational principles throughout the country. Humanism, rigid formalism, and rationalism contended with each other, and were each fostered, and advocated, according to local and personal influences. At this time, Locke's ideas on education commenced to exert a great influence on educational principles in Germany. His maxim of imparting knowledge mainly through the senses, in opposition to idealism, although not always carried out consistently, opened a new view of the principles of rational education. (See LOCKE.) Another system was founded by August Hermann Francke (q. v.). His principal aim was to implant true piety in the hearts of the young. Francke is the founder of the renowned institutions at Halle, in which a most decided realistic tendency became apparent, from the very beginning, in opposition to one-sided formalism. Among the studies pursued at Halle were chronology, astronomy, music, painting, anatomy, botany, and even the rudiments of medicine, together with other sciences properly belonging to technical schools. Greek and French were much neglected. Realism was the foundation of the whole educational structure. The so-called *Pædagogium* at Halle became a model school for the whole of Germany. It possessed a botanic garden, a museum of natural history, philosophical apparatus, a chemical laboratory, and a dissecting room. It was considered a normal school for the education of teachers; and its pupils subsequently became the propagators of realistic principles throughout the country. Francke's system laid the foundation to the so-called real schools. J. S. Semler, in Halle, was the first who used this term in announcing his establishment of "a mechanical and mathematical real school" in 1706, which, however, was of short existence. John Julius Hecker, also a disciple of the Halle school, established a real school in Berlin (1747), which, properly speaking, consisted of three different departments; namely, a German, a Latin, and a real school, but with arrangements to allow pupils of the two former to participate in the studies of the latter department. In many respects this real school carried its aims too far by taking up purely technical studies; however, it became the model for many similar institutions. The *Pædagogium*, or Latin school, was afterwards completely separated from the real school, and still exists under the name of *Friedrich Wilhelm's Gymnasium*. The demoralizing effects of the Thirty Years' War upon the national spirit of the German people were not effaced for a long period of time. The higher classes of society had, to a remarkable degree, lost all national individuality. They imitated foreign, mostly French, models, aiming at outward polish and elegance, but losing all appreciation of thoroughness, breadth, and harmony of culture, while the lower classes devoted their attention almost exclusively to the practical affairs of life and to useful knowledge. Pedantry on the part of the teachers, and immorality on the part of the students; superficiality on the one hand, and one-sided utilitarianism on the other, in educational principles, were the characteristics of the time. New pedagogical principles were propagated by Basedow (1723—90) and his followers, of whom Salzmann and Campe are the most noted, who are known to the educational world as the school of the Philanthropists. Their principal aim was to educate a youth to become a man in the best sense of the word,—to guide the natural impulses and the will by reason. Some of the schools established by the Philanthropists attained considerable renown, more especially the one founded by Salzmann at Schnepfenthal, near Gotha, which is still in a flourishing condition. The method of the Philanthropists, however, soon fell into disuse, owing principally to their disregard for the classic authors, whose educational value they underrated, and in the study of whom they were completely outstripped by rival schools. Although the general current of the time favored utilitarianism, a tendency encouraged by Frederick the Great, still there remained in the German nation too much latent love for the *ideal* to allow the realistic school to become all-absorbing. Just then, the first dawn of the great golden era of German classic literature broke upon the nation, and revived the love for ancient classic beauty. Winckelmann and Lessing revealed the splendor of ancient art and the eternal laws of the beautiful. They were followed by hosts of others. The love of the ancient classics, which was awakened even in the masses of the people by excellent translations of ancient authors into German, inaugurated by J. H. Voss's admirable translation of Homer's works, and the development of the German language, which had been greatly neglected for ages, during the following classic period of national literature, were brought into happy harmony, and their union became fruitful of the best results in the whole intellectual, moral, and esthetical life of the nation. As a matter of course, the cause of education also participated in the general advancement of the mental and moral culture of the nation; its aims became broader and loftier. The new philosophical school of modern humanists, in the sphere of education, comprehended many names thankfully remembered by subsequent generations. J. M. Gesner (1691—1761), rector of the Thomas School in Leipsic, and subsequently professor of ancient literature and founder of the philological seminary at Göttingen, became a stanch supporter and propagator of the new humanistic school. J. A. Ernesti 1781), at Leipsic, and C. G. Heyne (1812), at Göttingen, were also enthusiastic advocates of the study of the ancient classics. They, and many others, introduced their students to the beauties of the classics without wearying them with dry grammatical study, as had been the custom before. The chief representatives of the humanistic school are Friedrich August Wolf, August Böckh, Gottfried Hermann, Karl Reissig, and Karl Otfried Müller. At first, a close connection between the study of the ancient classics and of German literature was strictly observed; but, subsequently, when the latter had gained sufficient strength and classic character, this connection was gradually loosened. Although one-sided Latinism repeatedly asserted its opposition to the study of the German language and literature, it could never regain its former undisputed prerogative; while, on the other hand, Greek had recovered all the territory formerly lost. Wolf, Hermann, and Böckh form a triumvirate of educators who knew how to awaken a deep interest in the study of the ancients,—to introduce their scholars to the beauties of classic philosophy and literature, each according to his own individual predilections, without losing sight of the special requirements of their own time, or of the general harmony in the purposes of a really liberal education. In elementary education, the principles of Pestalozzi (1746—1827), commenced to be more widely known and appreciated in Germany, where the great educator's aim to elevate the lower classes of the people through a well-adapted domestic education, and his invention of a rational system of primary instruction, founded upon teaching from the object, and upon a gradual progression from the simple to the complicated, were rapidly adopted, and whence great numbers of teachers flocked to Pestalozzi's home to acquaint themselves more thoroughly with his methods. The downfall of the German nation before the victorious arms of the French emperor, in the beginning of the present century, far from curbing the national ambition, gave a new impetus to national life, which, in its turn, awakened the spirit of the nation to new exertions in the cause of education. New universities, *gymnasia*, and innumerable elementary schools were established. Though under the sway of a foreign oppressor, Germany doubled her efforts to elevate her educational institutions. The philosopher Fichte (1807—8), in his *Addresses to the German Nation* (*Reden an die deutsche Nation*) demanded a thorough reconstruction of the schools, and a universal public education of the nation. A fresh breath of life was inspired into the whole intellectual and moral being of the nation; and, in the darkest hours of her misfortunes and humiliation, Germany sowed the seed of future greatness, mainly by elevating the national spirit through her institutions of education, by the reformation of the old, and by the establishment of new schools, in which earnestness of purpose, thoroughness, morality, and harmony in the general development of mind and heart became, and are to this day, characteristic traits. During the first half of the present century, a constant extension, combined with greater depth, in the treatment of all the sciences, became every-where perceptible. In former centuries, the schools of a higher order had almost exclusively served the interests of the church. The Bible and the ancient languages, as far as they could be used as handmaids in the service of the church, had formed the most important elements of education. Every thing was brought into close relation to theology and its auxiliaries. When, in the course of time, the development of intellectual freedom gained ground and strength, and when purely religious instruction lost its supremacy and was limited to its proper sphere, other sciences could raise their claims to be admitted as important educational elements. The proper classification of studies to attain a complete humanistic, and, at the same time, scientific, education of the rising is a difficult problem, which still awaits a satisfactory solution. Of noted representatives of more modern German pedagogy, mention should be made of Johann M. Sailer, who gained considerable influence in the Catholic districts of Germany, of F. A. W. Diesterweg (q. v.), and of Friedrich Froebel (q. v.).

Primary Instruction.—The development of purely elementary instruction by means of public schools, in Germany, is, comparatively, of recent date. Elementary schools in cities (*Deutsche Schulen*) are traceable to a very remote period, their foundation being contemporaneous with the establishment of the earliest city Latin schools. These schools were quite numerous. In Hesse alone, there were, in the 13th century, 14 cities, which supported their own elementary schools. All official documents relating to elementary education, which have come down to our time, make reference to city schools only. In the country, in villages or hamlets, schools for elementary education, worthy of the name, were almost unknown. The sextons of country churches were required, in a general way, to instruct the children in the catechism; and it is from this primitive foundation that public elementary education has been built up to its present condition. In the electorate of Brandenburg, the first regular country schools, for children of both sexes, were established after the Thirty Years' War, in the 17th century, under the reign of the Great Elector, Frederick William; but we know very little of the condition of these schools. With the aggrandizement of the electorate, denominational differences commenced to manifest themselves. Thus we find, at an early period, a recognized distinction between Lutheran and Reformed schools. At Wesel, we find, as early as 1687, a seminary for the education of school-masters.—An ordinance, emanating from the church authorities in Pomerania, in 1563, relating to elementary instruction, makes no mention at all of village schools, but has reference to city schools only, subordinating them in every respect to the authority of the Church, and prescribing especially the study of reading, writing, and arithmetic, besides the catechism and choral singing.—The general condition of elementary instruction throughout the majority of the German states was about the same.—Even in the electorate of Brandenburg, a school ordinance of 1658 plainly shows that village schools, although their establishment was strongly urged, had not as yet become a living reality. When, in the beginning of the 18th century, the electorate of Brandenburg and the duchy of Prussia became a kingdom, feeble attempts were again made to establish public elementary schools throughout the royal dominions; but, as there was no supply of trained teachers, and the efforts where neither persistent, nor well directed, the general condition of elementary education in the rural districts remained pretty nearly unchanged. The elementary teachers, in those times, were generally forlorn and discarded students of the higher schools; and in villages, mostly mechanics, dismissed servants of noble families, or invalid and discharged soldiers. King Frederick William I., the second king of Prussia, paid especial attention to elementary schools for the mass of his people, with the design of educating them to a strict obedience to secular and church authority, and to habits of industry and frugality. He is reported to have established within his states about 1,800 elementary schools. Frederick William I. was the protector of the pietistic school of educators, at Halle; and, through the exertions of Francke and his followers, Prussia received the first trained professional instructors. Teaching, for the first time, became a recognized science; and the theory of pedagogy, and practical methods of instruction, were made indispensable requirements for the office of a public teacher. A royal decree, regulating educational affairs in the monarchy, and relating to institutions of all grades—in fact, the first general school law for the Prussian monarchy—was issued October, 1713. A few years afterward, in a number of royal decrees, the first initiatory steps were taken toward obligatory education throughout the kingdom. The directing and supervising power was placed entirely in the hands of the church authorities. The founding of teachers' seminaries by the state was not then thought of. By private enterprise, a teachers' seminary was established in Stettin, Pomerania, in 1735; and, in the following year, another was founded, by order of the king, at the convent of Bergen, near Magdeburg.—Although the number of schools increased very considerably during the reign of the energetic second king of Prussia, still, the qualifications of the teachers and the general condition of the elementary schools remained in quite a primitive state; and the only important progress made was the gradual development of the idea, among all classes of the people, that education, to some extent, had become an absolute necessity.—Frederick II. (the Great), although himself a highly cultured monarch, had very little time to devote to the advancement of elementary education, until after the close of the Seven Years' War, when he promulgated a code of "general school regulations", which contained all the leading features of the later Prussian school laws, prescribing the general obligation to attend school, fixing the obligatory school age of the pupils, the payment of school money, and fines for non-attendance, and charging the church authorities with the duty of supervising public schools. This code of *school regulations* emanated from the pen of Johann Julius Hecker (q. v.); and the king, after many consultations with other recognized authorities, gave it his sanction. The execution of these laws, however, met with many serious difficulties in several parts of the monarchy, partly on account of religious differences between Catholics and Protestants, in regard to the supervisory authority intrusted to the church; partly on account of the obstinacy of the peasantry in refusing the payment of school money; partly from various other causes, arising from local differences, which, in the end, necessitated many modifications of the original general plan, for certain districts of the kingdom. Soon afterward, the necessity was felt of regulating the system of city school education in a manner similar to that prescribed for the country schools. The exceedingly meager remuneration of teachers throughout the country was one of the greatest obstacles to the securing of well-qualified instructors, and led to the establishment of a state-aid fund, from the interest of which a small subsidy was granted to meritorious teachers. The king never relaxed his interest in common-school education. The newly acquired province of Silesia, with its majority of Catholic inhabitants, enjoyed his special care. A Catholic teachers' seminary was founded at Breslau, in 1765; where, two years afterward, a Protestant teachers' seminary was also founded, the latter dependent mainly upon private support. Under the reign of Frederick William II., the successor of Frederick the Great, the care of the government for popular education was undiminished.—In 1787, an *Ober-Schul-Collegium* (High School Commission), consisting of professional members only, was established at Berlin, for the examination of teachers, with the design of appointing only well-qualified persons as teachers, without, on the other hand, interfering with the established rights of school patrons to fill vacancies. In the Prussian *Common Law* of 1794, all educational institutions, including universities, were declared state institutions; and a foundation was laid for a legally-recognized educational system for the entire monarchy, which, in its fundamental principles, has remained intact to the present day. During the first years of the reign of Frederick William III., no material changes were made in the elementary school system of the kingdom. Great difficulties, however, impeded the general progress of elementary school education throughout the kingdom; and the education of females was even more backward than that of males. Ernestine von Krosigk was the first who had sufficient courage to establish a seminary for female teachers,—in Berlin, in 1804. The great national calamity which befell Prussia, and Germany in general, shortly afterward, brought all the various efforts for the advancement of public education to a stand-still for some time. King Frederick William III., however, declared, "although we have lost territory, power, and prestige, still we must strive to regain what we have lost by acquiring intellectual and moral power: and, therefore, it is my earnest desire and will, to rehabilitate the nation by devoting a most earnest attention to the education of the masses of my people." National education, which had, hitherto, been intrusted to the care of a subordinate committee, under the state ministry of justice, became a distinct and important branch of the state administration, as a separate department of the ministry of the interior, and so remained until the close of 1811, under the immediate charge of the celebrated Wilhelm von Humboldt; afterward, until 1817, under Von Schuckmann, who was very efficiently assisted by Nicolovius and Süvern. The laws regulating national and popular education, hitherto a dead letter in many respects, became, for the first time, a reality, and commenced to show their beneficial influence upon the advancement of national culture. Renewed and energetic efforts were made to educate teachers in accordance with the most approved system of the time. Many instructors were invited from other states to accept engagements in Prussia; others were trained under the immediate supervision of Pestalozzi. A new spirit commenced to pervade all classes of the people, now a homogeneous nation. In 1818, Von Altenstein was appointed to the newly established ministry of educational affairs, being still assisted by Nicolovius and Süvern. National education soon attained a high degree of development, considering the scanty appropriations, both state and municipal, for the support of educational institutions of all grades. At the time of Altenstein's death, there were, in Prussia (including then only the eight old provinces), 6 universities, 120 colleges, and a still larger number of real schools, 38 teachers' seminaries, and about 30,000 public schools, in a tolerably flourishing condition. Every sixth inhabitant of the kingdom was attending school. In 1840, Minister Eichhorn was appointed to the department of educational affairs. Two decrees of this minister especially stigmatize his administration,—the closing of the Protestant seminary at Breslau, and the discharge of Diesterweg (q.v.); but the revolutionary year 1848 swept away Eichhorn and his system. It is the merit of Friedrich Stiehl, a modified Pestalozzian, who entered the state ministry of educational affairs as a *collaborator*, not only to have maintained the original great principles of national education, but to have developed the same under the administrations of all the successors of Eichhorn, down to Von Mühler. At the close of 1861, there were, in the eight old Prussian provinces, with a population of 18,476,500 (of whom 3,090,294 were within the obligatory school age, from 6 to 14 years), 2,875,836 children actually attending school. The number of schools was 24,763 (2,935 in cities, 21,828 in villages, etc.), with 36,783 classes (10,290 in city schools, 26,493 in country schools), and 35,372 teachers (33,615 males and 1,755 females). Two-thirds of these schools (16,540) were Protestant; about one-third (8,082), Catholic, and 141, Jewish. Of licensed private schools, there were, in 1861, 1,434, with 2,944 classes and 84,021 pupils. Thus the aggregate of registered elementary-school children, in 1861, amounted to 2,959,857, leaving 130,437, who, either received no education at all, or were comprised in the number of pupils attending higher educational institutions. Of the children attending public schools, there were, in 1861, Protestants, 1,775,888; Catholics, 1,063,805; Jews, 30,053; miscellaneous, 6,090. The sum total of public elementary-school teachers' salaries, in 1861, amounted to 7,449,224 *thalers* (1 *thaler*

= $0.714) (excluding the principality of Hohenzollern, which had an independent school budget), which sum was raised as follows: 2,320,968 *thalers*, school money paid by pupils; 4,799,958 *thalers*, raised by the communities; 328,298 *thalers*, state appropriation. Other requirements of public elementary school education demanded a further disbursement of 2,453,472 *thalers*, swelling the aggregate of expenditures for the eight old provinces of Prussia, in 1861, to 9,902,696 *thalers*. The little principality of Hohenzollern had a separate budget of 66,462 florins (1 florin=$0.385). Thus, of the total expenditure for public elementary education, in Prussia, 31.16 per cent was raised from the pupils; 64.44 per cent, by the taxation of communities, and only 4.40 per cent, by appropriations on the part of the state. The prevailing principle, at present, in Prussia, for the support of public schools, is, that all the schools must be made, as far as possible, self-sustaining, by the payment of school money, and by local taxation, the state granting aid only in cases of the inability of communities to maintain the schools in the legally-prescribed manner. The city of Berlin, with a free-school system, in 1874, supported 77 common elementary schools, with an aggregate of 950 classes (488 for boys, with 484 male and 4 female teachers; and 462 classes for girls, with 284 male and 178 female teachers). The whole force of teachers, including assistant and special teachers, amounted to 1,279. The average number of classes to each school was 12; the average number of pupils to each class, 51; to a school, 640. The average number of pupils in free schools was 48,420; besides 10,500 children in corporate or private institutions aided by the city; making a grand total of 59,000 children enjoying free elementary education at the expense of the city. The cost of elementary free schools supported by the city amounted to 860,000 *thalers*; whereas the aid granted to *higher* city schools, besides the school money paid by pupils, required an extra expense of 25 *thalers* per pupil. The average yearly salary of a principal of a common elementary school, in Berlin, is 1,180 *thalers*; of a class teacher, 745 *thalers*; of a female teacher, 487 *thalers*; of female teachers of needle-work, 109 *thalers*.—In Prussia, a fund has been established for the pensioning of teachers' widows and orphans, which, in 1861, amounted to 1,682,158 *thalers*, with a yearly revenue of 139,331 *thalers*, from which 6,017 teachers, or their widows and orphans, were pensioned. Similar pensioning funds for teachers and their widows and orphans are founded in all the German states. — The following are the principal items of *school statistics* for the other German states: *Bavaria*, in 1874, supported 7,016 public elementary schools (4,893 Catholic, 1,938 Protestant, 124 Jewish, 61 miscellaneous), with 9,431 male and 890 female teachers. Total number of pupils, 632,599 (310,713 male, 321,886 female; 438,945 Catholic, 187,387 Protestant, 5,883 Jewish, 384 miscellaneous). Of the 7,016 public elementary schools, 5,764 levied school money on their pupils, amounting to 1,025,443 florins a year. *Baden*, in 1874, had 1,765 elementary public schools, with an attendance of 213,278 pupils (109,860 males and 103,418 females). The minimum salary of teachers ranged from 920 to 1,380 *marks* (1 *mark*=$0.238), with dwelling-house, or extra compensation instead. *Hesse Darmstadt* employed 6,460 public elementary teachers. *Saxe Weimar* employed 701 teachers, who instructed 46,683 pupils. The kingdom of *Saxony*, in 1871, supported 2,143 elementary schools, with 4,067 teachers and 429,679 pupils. The Saxon schools are reckoned among the very best in Germany. The kingdom of *Würtemberg* maintained 2,240 common elementary schools, with about 285,000 pupils, of whom one-third were Roman Catholic.—For the entire German Empire, we find the following *statistics* (1872): Total number of public elementary schools (estimated) about 60,000; teachers, about 110,000; pupils, about 6,500,000, or, more than 15 per cent of the entire population. The proportion of pupils to the entire population, in the several German states, varies as follows: of every 1000 of the population, there are school attendants, in Saxony, 184, in Prussia, 155, in Würtemberg, 132, in Bavaria, 126, in Mecklenburg, 120; while in Brunswick, Anhalt, Oldenburg, and the Thuringian principalities, the proportion varies from 160 to 184.

School Administration.—Prussia.—All educational institutions of the monarchy are governed, primarily, by the state ministry of ecclesiastical, educational, and medical affairs, in Berlin. Every province has its own provincial school commission for the general administration of schools, and a scientific commission, with proper subdivisions, for the examination of teachers. The provincial state school authorities are assisted, in the larger cities, by committees elected for this purpose by the administrative bodies of the municipalities (*Schul-Deputationen*); and in villages, by other officials. The law of March 11., 1872, confers the right of supervising all educational institutions, public and private, upon the state. Consequently, all supervisory power is derived from the state, and exercised under its authority. The co-operation of local authorities, as established by law, is recognized by the state. In *Bavaria*, educational institutions are subordinate to the ministry of the interior, through the department of church and school affairs (*Oberster Schul-Rath*) and a committee for examinations, appointed annually. *Saxony*, *Würtemberg*, and the minor German states, administer their school affairs in a similar manner. — A federal school commission has lately been established in Berlin.

Secondary Instruction.—Secondary school instruction, in Germany, aims to give a sound basis for general scientific and literary education. This grade of education is directed to two clearly distinct ends,—that of a general philosophical and liberal education, as represented in the gymnasium or pro-gymnasium; and that of a more practical education, as represented in the real schools, of the first or second order, and the higher burgher schools. A complete gymnasium has at least six grades (*sexta* being the lowest, *prima*, the highest). The upper grades, from the third to the first, are mostly subdivided into two divisions—a lower and a higher. The course of instruction comprises 9 years, of which the lower grades generally require one year each; the higher, one year for each division. A pro-gymnasium comprises the gymnasium classes from the lowest to the third or second grade of a full gymnasium, with a course of five or six years. A complete real school of the first order has six grades and a nine years' course; one of the second order, six grades and a seven years' course. The higher burgher schools have only the five lower classes of a real school. With most of these secondary schools, preparatory departments, comprising one, two, or more grades, are connected. Candidates for the lowest class of secondary institutions are generally required to have completed their 9th year of age, and to pass a satisfactory examination in the elementary branches of a common-school education.—In *Bavaria*, there are *Studien-Anstalten*, or classical gymnasia, with 9 grades and a course of 9 years, the 5 lower of which constitute the Latin school, and the 4 higher, the gymnasium proper. The so-called Latin schools are frequently separated from the higher grades, and form distinct institutions. Real gymnasia, which, in Bavaria, consist of a real school and a gymnasium, have a six years' course of instruction. In *Würtemberg*, there are full gymnasia, founded upon nearly the same basis as those in Prussia; or lyceums, analogous to the Prussian pro-gymnasia; or Latin schools, as preparatory schools for institutions of a higher order. In *Saxony*, *Baden*, and the other German states, secondary institutions of learning are generally established upon the same basis as in Prussia. The following schedule presents, in a general way, the course of study followed in a Prussian gymnasium (I. designating the highest grade; VI., the lowest):

NUMBER OF WEEKLY RECITATIONS IN EACH GRADE.

Studies.	VI.	V.	IV.	III.	II.	I.
Religion	3	3	2	2	2	2
German	2	2	2	2	2	3
Latin	10	10	10	10	10	8
Greek	—	—	6	6	6	6
French	—	3	2	2	2	2
History and Geography	2	2	3	3	3	3
Geometry and Arithmetic	4	3	3	3	4	4
Physics	—	—	—	—	1	2
Natural history	2	2	—	2	—	—
Drawing	2	2	2	—	—	—
Penmanship	3	3	—	—	—	—
Total...	28	30	30	30	30	30

This does not include Hebrew, singing, or gymnastics (*Turnen*), these being taught out of the regular school-hours.

In 1874, there were in Germany, 547 gymnasia, pro-gymnasia, and real-gymnasia, with 6,751 instructors and 108,212 pupils; and 426 real and higher burgher schools, with 4,422 instructors and 79,828 pupils.—In the German Empire, one pupil in every 377 of the aggregate population receives a classical, and one in every 468, a non-classical, secondary education.—For the higher education of females, there were in Germany (in 1873) 278 schools of the secondary order,—in Prussia and Alsace-Lorraine, 207; Bavaria, 7; Saxony, 6; Baden, 10; Hesse, 9; Anhalt, 5; the Mecklenburgs, 4.—There are also many private institutions of great excellence not included in this enumeration.

The salaries of instructors vary greatly, the lowest salary of an assistant teacher being about 1,500 *marks*, that of an ordinary teacher from 3,000 to 6,000 *marks*, and that of a director seldom exceeding 9,000 *marks*. In October, 1873, a conference was held in Berlin, convened by the Prussian minister of public instruction, to discuss questions of secondary instruction. The old dualism in this grade of education formed an important subject of debate, and both the classical and the realistic courses were fully discussed. The unanimous opinion of the conference was, that neither gymnasia nor real schools should be considered special schools, but that their common object should be the advancement of general education. The majority of the meeting seemed to think that the gymnasium and the real school should each pursue its own way, without interfering with the other. On the question of bifurcation, opinions were much divided, but the opinion generally prevailed that none of the existing secondary schools could be considered superfluous.—In regard to the question whether real-school graduates should be admitted to the universities, the prevailing opinion was, that such graduates should be admitted according to the existing regulations, but only to those state examinations (*Staats-Examina*) which were required for obtaining the position of teacher of mathematics, natural sciences, or modern languages. Many other points of importance relating to secondary education were exhaustively discussed; and Minister Falk, in closing the conference, said that the discussions of the meeting would be taken into careful consideration by the ministry of public instruction.

Teachers' Seminaries.—No class of the educational institutions of Germany has won more general admiration than the teachers' seminaries. Gradually developed in Prussia, through the efforts of Francke, Hecker, and their successors, they have now become the training schools in which nearly all the teachers of the elementary schools receive their education. All political and even all religious parties, in Germany, agree in attributing the highest importance to the professional training of elementary teachers in these seminaries; and the appreciation in which they are held abroad, is best attested by the fact that the system has spread from Prussia over the greater part of Europe and the civilized world. (See TEACHERS' SEMINARIES.) The age required for admission to these schools now varies from the 14th to the 16th year. Admission is every-where made contingent upon the result of a rigid examination, at which, in many cases, a school councilor (*Schulrath*) is present. The candidates receive the preparation needed for the examination either by private instruction, or in special preparatory schools, called *Proseminarien* or *Präparandien*. In the kingdom of Saxony, these preparatory schools were, in 1874, organically united with the seminaries, which now have six classes. In Prussia, the course of instruction, as well as the examination of candidates, has been re-organized by the General Regulations (*Allgemeine Bestimmungen*) of Oct. 15., 1872. According to these regulations, the royal seminaries have three classes, each with an annual course of instruction. The two lower classes are instructed in pedagogics (2 hours a week), religion (4 h.). German language (5 h.), arithmetic (3 h.), geometry (2 h.), natural science (4 h.), geography (2 h.), history (2 h.), music (5 h.), drawing (2 h.), penmanship (2 h. in the lowest, 1 h. in the middle class), gymnastic exercises (2 h.), either French or Latin, according to the option of the pupils (3 h.). The course of studies in the highest class drops penmanship, and devotes the same amount of time to pedagogics, history, music, and gymnastic exercises, but reduces the time allowed for other subjects (religion, 2 h.; mother-tongue, 2 h.; arithmetic and geometry, 1 h.; natural science, 2 h.; geography, 1 h.; drawing, 1 h.; French or Latin, 2 h.). In some of these subjects, the course of studies is now more comprehensive than formerly. Thus, the instruction required in pedagogics, is henceforth, to embrace the most important points of psychology. Instruction in German must illustrate the divisions of lyric, epic, didactic, and dramatic poetry. The private reading of the pupils must especially be devoted to the classic writers of the last three centuries. In addition to the history of Germany and Prussia, the pupils receive a course of Greek and Roman history.—The course of instruction in the seminaries, in the other German states (also in Austria), is, substantially, the same. In the kingdom of Saxony, a new course of studies was introduced in 1874, which makes the study of Latin a part of the regular course. The other German states provide for no instruction in a foreign language; and Austria provides for French only. — The number of teachers' seminaries, in 1875, was (according to Brachelli, *Die Staaten Europa's*, 1875), in Prussia, 101, and in the other states, 73. The total number of pupils in the Prussian seminaries, in May, 1875, was 6,456, being 1,670 more than in 1874.

The Universities. — The following list gives the names of all the universities of Germany, and of the German part of Austria, arranged according to the chronological order of their foundation: Prague (1348), Vienna (1365), Heidelberg (1386), Cologne (1388, discontinued in 1798), Erfurt (1392—1816), Leipsic (1409), Rostock (1419), Greifswald (1456), Freiburg (1457), Ingolstadt (1472, transferred to Landshut, in 1802, and to Munich, in 1826), Treves (1472—1798), Tübingen (1477), Mayence (1477—1790), Wittenberg (1502, transferred to Halle, in 1817), Frankfort on the Oder (1506, transferred to Breslau, in 1811), Marburg (1527), Königsberg (1544), Dillingen (1549—1804), Jena (1558), Helmstädt (1576—1809), Altorf, near Nuremberg (1578—1809), Olmütz (1581—1855), Würtzburg (1582), Herborn (1584—1817), Gratz (1586), Giessen (1607), Paderborn (1615—1803), Stadthagen (1619—21), Rinteln (1621—1810), Salzburg (1622—1811), Osnabrück (1630—1633), Münster (1631, in 1818 transferred to Bonn), Bamberg (1648—1804), Duisburg (1655—1802 Kiel (1665), Innspruck (1672), Lingen (1685—1819), Halle (1694), Breslau (1702), Fulda (1734—1805), Göttingen (1737), Erlangen (1743), Bützow (1760—1789), Berlin (1809), Bonn (1818), Munich (1826), Strasbourg (1872). The early history of the German universities agrees, in its essential features, with that of the universities of other nations. (See University.) At first, a papal decree was regarded as indispensable for their establishment; but, later, they were established upon imperial authority, with or without papal sanction; and, in 1495, the emperor Maximilian granted to every elector the right to establish one in his dominions. The original classification of the students was according to nationalities, each of which elected a procurator; but, simultaneously, there existed an organization according to the four faculties. The rector of the university was, at first, elected from the philosophical faculty, but, soon after, in turn from each of the four faculties. Every faculty elected a dean from the lecturing *magistri*, who, in their turn, formed the faculty council.—The students of Germany, like those of other countries, formerly gave a great deal of trouble by their riotous and immoral conduct, as well as by some abuses to which the younger students were subjected by the older. The student was introduced to university life by a singular ceremony, called the *beania*, or *deposition*, which consisted of a series of painful castigations. This habit gave way to the still more absurd *pennalism*, which kept the freshman in a state of humiliating servitude to the senior students. The final suppression of *pennalism* and of the large students' associations, by the united action of the universities and governments, was attended with considerable public disturbances, and led to the formation of secret orders or associations (*Landsmannschaften* or *Corps*), which tried to perpetuate *pennalism*, or the dependence of the younger upon the older students in a modified form. Each association elected, for the term of one year, a *senior*, and the convention of *seniors* (*Seniorenconvent*) represented the common interests of these associations. A strong *esprit de corps* was, in this way, created and fostered among the students, and many habits peculiar to these German institutions were developed. Among the worst of these habits was dueling, which, in spite of all the laws against it, has maintained itself, though not to the same extent as formerly, to the present day. The awakening of the German people, which attended and followed the national war against Napoleon, led, in 1815, to the establishment of the *Burschenschaft*, an association of students, for promoting the moral and intellectual condition of their country.

The modern German universities have maintained many of the characteristics of the earlier times, at least in their general organization and administration, while, as a matter of course, the number and quality of the studies pursued widely differ from the original standard. The leading characteristics of a larger German university are represented in the following account. A university consists of the corporation of ordinary and extraordinary professors, licensed private lecturers (*Privat-Docenten*), and the immatriculated students, besides the necessary officials and their adjuncts. The studies pursued are generally classified into four grand subdivisions, or faculties: the theological, the juristical, the medical, and the philosophical; the last embracing, besides mental philosophy, mathematics, the natural sciences, philology, history, and cameralistics, or political and international economy. Each faculty forms an independent subdivision of the university. The general administration of a university is intrusted to a select body of professors, called the Senate, presided over by the rector. The relative rank of the professors is determined according to seniority in office, like that of an ordinary professor at any university. The several faculties are officially represented by the body of ordinary professors of each discipline. In a wider sense, the extraordinary professors and *privatim docentes* are also considered members of their respective faculties. The faculties are obliged to exercise a certain supervision over the attendance and conduct of the students inscribed upon their respective faculty rolls. Each faculty is responsible for the completeness of the instruction offered to students, within the limits of the faculty studies, inasmuch as three (for students of medicine, four) years must comprise a full curriculum of the main studies pertaining to each discipline. — Each faculty annually elects a dean for the administration of its special affairs. The dean is the president and chief executive officer of his faculty. The rector and the senate are elected annually by a *plenum* (full meeting) of the ordinary professors. The senate usually consists of the rector, his immediate predecessor in office, the faculty deans, and five members elected from the number of ordinary professors. This body, under the presidency of the rector, exercises supreme authority in all matters concerning the university as a whole, and the highest disciplinary power relative to students. The rector is the highest functionary, and the foremost representative, of a university in all its external relations. In the discharge of academic jurisdiction, a syndic is added to the senate, who has the rank of an ordinary professor. The syndic is the professional adviser to rector and senate in all questions relating to statute law or to the state constitution. Academic jurisdiction is vested in the rector, the syndic, or the full meeting of the senate, according to the character of the offense. Students are admitted to the university and academic rights by the act of matriculation. If a native, the student must produce a certificate of graduation from a gymnasium; if he is a foreigner, a certificate is required testifying to his good moral character. By the act of matriculation, the student acquires all the academic rights and privileges granted to students by statute law. Disciplinary measures and punishments, according to the nature of the offense, are a private reprimand by the rector, a public reprimand before the senate, incarceration, warning of the *consilium abeundi* (advice to leave), the *consilium abeundi* proper (temporary removal, mostly for one term, or six months), and, lastly, the *relegatio* (expulsion), or the *relegatio cum infamia* (dishonorable expulsion). Students expelled *cum infamia* cannot be admitted to any other university. The right to lecture is granted only to the appointed professors, ordinary or extraordinary, and authorized private lecturers (*Privat-Docenten*), who must have attained the degree of Doctor; or, in the theological faculty, the degree of Licentiate. All are carefully excluded from the privilege of hearing lectures, who have not attained the necessary degree of mental or moral maturity, more especially under-graduates of gymnasia, and all who have forfeited their matriculation. Lectures for the succeeding semester are publicly announced before the termination of the current semester. The first course of lectures commences in the fall of the year, at about the middle of October, and terminates towards the latter part of March; the second course commences in the beginning of April, and terminates in the latter part of August. At the beginning of 1877, the German Empire had 20 complete universities, of which 9 were in Prussia, 3, in Bavaria, 2 in Baden, 1 each in Saxony, Würtemberg, Hesse, Mecklenburg, Saxe Weimar, and Alsace-Lorraine. The number of professors and students at each of these universities, in 1876, was as follows:

NAME	Professors	Students (incl. of non-matriculated hearers)
Berlin (Prussia)	197	4,105
Bonn "	100	736
Breslau "	107	1,141
Erlangen (Bavaria)	54	428
Freiburg (Baden)	53	294
Giessen (Hesse)	54	352
Göttingen (Prussia)	115	1,005
Greifswald "	57	452
Halle "	96	888
Heidelberg (Baden)	104	488
Jena (Saxe Weimar)	73	459
Kiel (Prussia)	61	215
Königsberg (Prussia)	83	615
Leipsic (Saxony)	156	3,032
Marburg (Prussia)	65	411
Munich (Bavaria)	116	1,232
Rostock (Mecklenburg)	39	153
Strasbourg (Alsace-Lorraine)	90	707
Tübingen (Würtemberg)	84	830
Würtzburg (Bavaria)	67	1,019

Each of these universities has the four time-honored faculties. Bonn, Breslau, and Tübingen have each two theological faculties, one Catholic and one Protestant. Munich, Würtzburg, and

Freiburg have only a faculty of Catholic theology; and each of the others, one of Protestant theology. In addition to the four usual faculties, there is, in Munich, Würtzburg, and Tübingen, one of political economy; and in Tübingen, one of natural sciences. The academy of Münster, which has only two faculties (Catholic theology and philosophy) is also classed among the universities. At the Swiss universities of Bern, Basel, and Zürich, at the Russian university of Dorpat, and at the Austrian universities of Czernowitz, Gratz, Innspruck, Prague, and Vienna, the German language is exclusively or predominantly in use.

Professional and Technical Instruction.—In 1875, there were, in Germany, 10 technical, or polytechnic, high schools; namely, (1) *Berlin*, the *Bau-Akademie* (high school for architecture); (2) *Berlin*, the *Gewerbe-Akademie* (departments of machines and engineering, chemistry, mining, and naval construction); (3) *Hanover*, preparatory and polytechnic school, with 24 ordinary, 3 extraordinary instructors, 6 assistants, and 633 students); (4) *Aix-la-Chapelle*, general preparatory school and special departments of architecture, engineering, machines and mechanical technics, chemical technics, and mining, with 20 ordinary, 2 extraordinary, 15 assistant instructors, and 467 students; (5) *Munich*, general introductory school, and departments for engineering, architecture, mechanical technics, chemical technics, and agriculture, with 21 ordinary, 5 extraordinary, 32 assistant instructors, 9 private lecturers, and 1053 students; (6) *Dresden*, general introductory school; departments of engineering, mechanics, architecture; chemical technics, mathematics, and natural sciences, with 20 ordinary, 5 extraordinary, 9 assistant instructors, 3 private lecturers, and 366 students; (7) *Stuttgart*, departments of architecture, engineering, machine building, chemical technics, mathematics, natural sciences, with 23 ordinary, 25 assistant, 11 private instructors, and 537 students; (8) *Carlsruhe*, departments of mathematics, engineering, machine building, mechanical technics, architecture, chemistry and chemical technics, and forestry, with 35 ordinary, 1 extraordinary, 10 assistant instructors, 1 private lecturer, and 610 students; (9) *Darmstadt*, a general preparatory school and departments of architecture, engineering, machine building, chemical technics, mathematics, and natural sciences, with 28 ordinary and 4 assistant instructors, and 179 students; (10) *Brunswick*, a general preparatory school of arts and sciences; departments of architecture, engineering, machine building, chemical technics, pharmacy, and forestry, with 24 ordinary and 5 assistant instructors, and 153 students. There are also technical academies at Cassel, Nienburg, and other places. Of technical schools, there were, in 1875, in Prussia, 32 provincial technical schools (*Gewerbe-Schulen*); in Bavaria, 36 (including commercial and agricultural schools); in Saxony, 9; and in Saxe Coburg-Gotha, 3.

Scientific Instruction.—Military Academies.—There are schools of military science, especially for the education of general-staff officers, at Berlin and Munich; the imperial naval academy and school at Kiel; and, for the education of army officers, the combined artillery and military engineering schools at Berlin and Munich, the war schools at Potsdam, Erfurt, Neisse, Engers, Cassel, Hanover, Anclam, Metz, and Munich, and the several cadet corps in different states; also the military surgical institute, and veterinary school at Berlin. There are numerous military schools for non-commissioned officers throughout the German states.—*Veterinary academies* are established at Berlin, Munich, and Hanover; *academies of forestry*, at Neustadt-Eberswalde, Munich, Tharandt, Hohenheim, and Aschaffenburg; *mining academies*, at Freiberg and Clausthal, besides departments for mining engineering at the polytechnic schools at Berlin and Aix-la-Chapelle; *agricultural academies*, at Berlin, Hofgeisberg, Göttingen, Eldena (near Greifswald), Proskau (near Oppeln), Poppelsdorf (near Bonn), Tharandt, Hohenheim (near Stuttgart), and Weihenstephan; and *pomological institutes* at Proskau and Geisenheim. *Schools of navigation* exist at Memel, Pillau, Dantzic, Grabow (Stettin), Barth, Stralsund, Altona, Flensburg, Apenrade, Geestemünd, Leer, Papenburg, Emden, and Timmel; also 7 preparatory nautical schools. There are *conservatories of music*, at Berlin, Munich, and numerous other cities; and *commercial colleges* (15) at Dantzic, Berlin, Breslau, Dresden, Leipsic (2), Chemnitz, Zwickau, Gera, Lübeck, Osnabrück, Hildesheim, Hanover, Munich, and Nuremberg.—The institutions for *special instruction* are the following: (1) for the *deaf and dumb:* in Prussia, 37; Bavaria, 12; Saxony, 3; Würtemberg, 4; Baden, 2; Hesse, 2; Mecklenburg, Oldenburg, Saxe Weimar, Anhalt, Brunswick, Saxe Coburg-Gotha, Saxe Meiningen, Reuss, and Hamburg, each 1; (2) for the *blind:* in Prussia, 15; Bavaria, 3; Saxony, 2; Würtemberg, 2; Baden, Hesse, Mecklenburg, each 1; other states, 6; in all, 31.

Educational Publications.—In 1873, there were published in the German empire 84 papers devoted to education (Prussia, 41; other German states, 43).—See Schmid, *Encyclopädie*, articles *Preussen*, *Bayern*, *Sachsen*, *Würtemberg*, *Hannover*, *Baden*, etc.; Raumer, *Geschichte der Pädagogik* (Engl. trans. by Barnard); Schmidt, *Geschichte der Pädagogik*; Barnard, *National Education*, vol. i.; *Circulars of Information* of the Bureau of Education, No. 2 (Washington, 1874); Wiese, *Verordnungen und Gesetze für die höhern Schulen in Preussen*. The *Pädagogischer Jahresbericht*, edited by Dittes (vol. xxviii., Leipsic, 1876, embracing the year 1875), and the *Chronik des Volksschulwesens*, edited by Seyffarth (vol. xi., Gotha, 1876, embracing the year 1875), give, from year to year, a very full account of the progress of education in all the German states. The fullest statistical account of secondary instruction is given in Mushacke, *Deutscher Schul-Kalender* (vol. xxv., Leipsic, 1876; edited by Jenne); and the fullest account of the German universities, in *Deutsches akademisches Jahrbuch* (vol. ii., Leips., 1876).

GESNER, Johann Matthias, a German educator, born April 9., 1691; died Aug. 3., 1761. He studied at Jena, and after holding several minor positions, became, in 1730, rector of the celebrated Thomas School, in Leipsic. This he found in a very low condition, both in respect to studies and discipline; but, in a few years, he succeeded in restoring its former reputation. In 1734, he accepted a call to the new university of Göttingen, where, in the position of professor of ancient literature, he exerted great influence upon the progress of philosophy in Germany, and contributed to a thorough reform of the literary institutions of a higher grade. He was intrusted with the establishment of the first philological seminary, and was appointed inspector of all the Hanoverian schools,—two offices for which his former labors eminently fitted him. In 1757, he drew up the new school regulations, in which he embodied the experiences of his life as a teacher, and the results of a mature study of the proper organization of classical schools. He favored the views of Ratich (q. v.), Comenius (q. v.), and Locke (q. v.), as to the best method of facilitating the study of languages and making it attractive. Notwithstanding his great official industry, he wrote a large number of important works on pedagogy and philology, besides publishing valuable editions of the classics.—See J. M. GESNER, *Educational Views*, in BARNARD'S *Journal of Education*.

GIFTS, Kindergarten, the term used by Froebel to designate the apparatus devised by him for kindergarten instruction, inasmuch as they are not used by the teacher but *given* to the children, as the material for interesting and instructive occupation, by the manipulation of which their faculties are unfolded in accordance with the *developing method* (q. v.). These *gifts* are grouped in sets, numbered from 1 to 20, and include the following, of which, however, Nos. 8 to 20 did not originate with Froebel directly: (1) *Six soft balls* of various colors, the object of the use of which is to teach *color* (primary and secondary), and *direction* (forward and backward, right and left, up and down); also to train the eye, and to exercise the hands, arms, and feet in various plays. (2) *Sphere, cube,* and *cylinder*, designed to teach *form*, by directing the attention of the child to resemblances and differences in objects. This is done by pointing out, explaining, and counting the sides, edges, and corners of the cube, and by showing how it differs, in these respects, from the sphere and cylinder. The manipulation by the child should, of course, precede this demonstration by the teacher. The child's self-activity will prompt it to place these forms in various positions and combinations, so as to realize in its conceptions every thing that is analogous or dissimilar in them. (3) A *large cube* divided into eight equal cubes, the object being to teach both *form* and *number*, also to give a rudimental idea of fractions. (4) A *large cube* divided into eight oblong blocks, designed to teach *number* and a simple variety of *form* (cube and parallelopiped). (5) A *large cube* divided into 27 equal cubes, three of the latter being subdivided into half cubes, and three others into quarter cubes (forming triangular prisms). This is a further continuation and complement of (3), but affording much ampler means of combination both as to *form* and *number*. (6) A *large cube* so divided as to consist of 18 whole oblong blocks, three similar blocks divided lengthwise, and six divided breadthwise,—a still further continuation of the ideas involved in (3). (7) *Triangular* and *quadrangular tablets* of polished wood, affording the means of further exercise in reversing the position of forms and combining them; and presenting, in addition, illustrations of *plane surfaces*, instead of *solids*, as in the previous gifts. This arrangement, placing the surfaces after the solids, recognizes an important principle of education,—that we should pass from the concrete to the abstract (see FORM), the square being a side of the cube, and a triangle deduced from the prism. (8) *Sticks for laying*,—wooden sticks about 13 inches long, to be cut into various lengths by the teacher or pupil, as occasion may require. These sticks, like most of the previous gifts, are designed to teach numerical proportions. The multiplication table may be practically learned by means of this gift. The forms of the letters of the alphabet, and the Roman and Arabic numerals, may also be learned. (9) *Rings for ring-laying*, consisting of whole and half rings of various sizes, in wire, for forming figures; designed to develop further ideas of form, also to afford a means for developing the constructiveness of the pupils, and practice in composing simple designs. (10) *Drawing slates* and *paper*, consisting of slates ruled in squares, and paper ruled in squares, for the purpose of enabling the pupil to draw or copy simple figures, in a methodical manner, the ruling aiding them in the adjustment of proportions. (11) *Perforating paper*, ruled in squares on one side only, with perforating needles, affording more advanced practice in producing forms, and executing simple designs. (12) *Embroidering material*, to be used for transferring the designs executed on the perforating paper, by embroidering them with colored worsted or silk on card board. (13) *Paper for cutting:* squares of paper are folded, cut according to certain rules, and formed into figures. The child's inclination for using the scissors is thus ingeniously turned to account, and made to produce very gratifying results. (14) *Weaving paper:* strips of colored paper are, by means of a steel or wooden needle of peculiar construction, woven into a differently colored sheet of paper, which is cut into strips throughout its entire surface, except a margin at each end to keep the strips in their places. A very great variety of figures is thus produced, and the inventive powers of the child are constantly brought into requisition. (15) *Plaiting material*, including sets of flats for interlacing so as to form geometrical and fancy figures. (16) *Jointed slats* (*gonigraphs*), for forming angles and geometrical figures. (See GONIGRAPH).

(17) *Paper for intertwining:* paper strips of various colors, eight or ten inches long, folded lengthwise, used to represent a variety of geometrical and fancy figures, by plaiting them according to certain rules. (18) *Paper for folding*, consisting of square, rectangular, and triangular pieces, with which variously shaped objects may be formed. (19) *Material for peas work*, consisting of wires of various lengths pointed at the ends, which are passed through peas, that have been soaked in water for six or eight hours; these are then used to imitate various objects and geometrical figures. Cork cubes are sometimes used instead of the peas, as being more convenient. (20) *Material for modeling:* modeling knives, of wood, and modeling boards, by means of which various forms are modeled in bees-wax, clay, putty, or some other soft substance.—These gifts thus represent every kind of technical activity, from the mere collection of the raw material to the delicate processes of design as well as plastic art. They are designed to develop not only the constructive ability of the pupil, through his natural impulse to activity, and by the exercise of the faculty of conception, so characteristic of childhood, but by their countless combinations of color and form to lay the foundation for a complete development of the esthetic nature. They address, at once, his intellect, his emotions, and his physical activities; while, as the child works out the results himself, he gains confidence in his own ability to surmount obstacles, and thus learns an enduring lesson of self-reliance. Kindergarten gifts and occupation material suitable for schools or families, are put up in sets and sold in boxes, convenient for use.— See A. Douai, *The Kindergarten* (New York); E. P. Peabody, *Kindergarten Guide* (New York, 1869); H. Hoffmann, *Kindergarten Toys, and how to use them* (New York); Aug. Kœhler, *Der Kindergarten in seinem Wesen dargestellt* (N. Y.); and *Die Praxis des Kindergartens* (Weimar); M. H. Kriege, *Friedrich Froebel* (N. Y., 1876).

GIRARD, Grégoire, a Swiss educator, born Dec. 17., 1763; died March 6., 1850. He entered the Franciscan order in his sixteenth year, studied theology in Würtzburg, and after being ordained as priest, held several positions as a teacher. He paid special attention to the common-school system, which in his native canton of Fribourg was in a poor condition; and he drew up a plan for the re-organization of the public-school system of all Switzerland, which, however, was not adopted by the federal authorities. In 1804, he returned to Fribourg to take charge of the schools of that city. He remained in that position up to 1823, when he resigned in consequence of a quarrel with the church authorities. From 1827 to 1834, he was professor of philosophy in Lucerne; but, after the latter date, he lived in retirement in his monastery in Fribourg. His administration of the schools of Fribourg attracted the attention of many of the friends of education throughout Europe. He paid particular attention to the teaching of religion and language. In the former, he ignored the doctrines of particular denominations, and favored general instruction in the fundamental principles of the Christian religion. His views on this subject are laid down in the *Premières notions de religion*, which he declared was not a catechism, but an introduction to a catechism. He also embraced Pestalozzi's views on the teaching of languages, making the study of the mother-tongue the basis of all instruction. Father Girard favored very much the system of mutual instruction as practiced by Dr. Bell (q. v.) and Joseph Lancaster (q. v.); indeed, he is regarded as the founder of that system in Switzerland. As an illustration of its efficacy, he said that "when he met with difficulty in explaining any word or subject to a child, he often called in a boy more advanced to aid him, and usually found him to succeed entirely, even when all his own efforts had failed." See Naville, *Notice biographique sur le P. Girard* (Geneva, 1850); Girard, *The Mother Tongue*, Engl. trans. (Lond., 1847).

GIRLS, Education of. See Female Education.

GLOBE, Artificial (Latin, *globus*), a hollow sphere, made of metal, plaster, or pasteboard, used as a model of the earth, and having delineated upon it all the various natural and political divisions of the terrestrial surface, together with the circles, etc., used in mathematical geography. Through its center, runs an iron axis the two ends of which project, and are fastened to a circle, or ring, of brass, within which the globe can be turned around. This ring, called the *brazen meridian*, is graduated so as to indicate degrees of latitude, and by rotating the globe can be made to represent the meridian of any place. The artificial globe is also usually surrounded with a broad horizontal ring of wood, called the *wooden horizon*, which has two slots in which the meridian, and with it the globe move, so that either pole may be elevated or depressed, and the horizon adapted to any place. The upper surface of the wooden horizon is divided into several concentric circles, representing degrees of amplitude and azimuth, signs of the zodiac, the points of the compass, the divisions of the year into months and days, etc. Such a globe is called a *terrestrial* globe. A *celestial* globe differs from it in representing the appearance of the starry heavens, constellations, etc., as if seen from the center of the globe. Globes of much simpler construction are made for elementary instruction.

The artificial globe is supposed to have been invented by Anaximander, about 580 B. C. Rules for the use of the terrestrial globe were first given by Ptolemy, 150 A. D. The two oldest globes now extant (both celestial globes) are of Arabic construction. One made in 1225, is preserved in the museum of Cardinal Borgia at Velletri; the other, made in 1289, is preserved in the mathematical hall of Dresden. In the 15th century, the use of globes in schools rapidly increased, and among those who distinguished themselves in their construction, are mentioned Martin Belicius, Gerhard Mercator, and Tycho

Brahe. The most celebrated globe is the so-called Gottorp globe, which was constructed, by order of the duke of Holstein-Gottorp, by Olearius and Busch, in 1664. It was 11 feet in diameter, and was at first set up in Gottorp, near Schleswig, whence it was, in 1713, transferred to St. Petersburg. The national library in Paris has two globes over 14 feet in diameter; and the Mazarin library and the museum of the Louvre have each a magnificent copper globe. The *georama* is a peculiar and colossal kind of globe which bears the delineation of places, etc., on the inner surface. A globe of this kind, 51 feet in diameter, was constructed in 1851 by Mr. Wyld, in London. An attempt to combine the terrestrial and the celestial globe was made by Lohse, in Hamburg, in 1829, the terrestrial globe being inclosed in a glass sphere bearing on its surface delineations of the constellations. A similar globe was constructed and patented in New York in 1867. Globes have also been made of india rubber, to be inflated for use; others of thin card-paper, made in sections, so as to be folded up and laid away when not needed. Embossed globes show, in exaggerated relief, the elevations and depressions of the earth's surface. The *hand hemisphere globe* is very useful for elementary instruction; it consists of two half-globes, or hemispheres, connected by a hinge, each flat surface containing a planisphere map of the corresponding convex surface. This arrangement shows the learner at once the relation of map to globe, also why the lines on the map which represent the circles must be curved. It is usually made so small that it can be passed from hand to hand while the teacher is explaining the lesson. The *wall hemisphere globe* is designed to afford a similar illustration. It is so constructed that the two hemispheres can be hung up side by side, against a wall, and contrasted with hemisphere maps, suspended above. Globes without any auxiliary appendages, such as stand, meridian, etc. are often constructed so as to rest on brackets, and thus form part of the esthetic decoration of the school room, when not in use. Globes having a black slate surface — *slated globes* — are very useful for many kinds of instruction. In using these globes, the pupil draws the circles — meridians, equator, and parallels, and delineates the countries, etc., with chalk, either from a map or from memory. The knowledge of geography thus acquired is more practical, and is more permanently based on the intelligent conceptions of the pupil. These globes are of great use in the study of advanced geography, as well as in that of spherical geometry, trigonometry, navigation, etc. Excellent globes, of every pattern and description, are made by Schedler, of New York, who has invented a method of manufacture, which renders them quite cheap and exceedingly durable. They are also remarkable for the scientific accuracy of their delineations.

The globe has many advantages over the map, as an apparatus for teaching geography, because (1) it represents the earth in its natural form, and shows clearly the relation of each and every part of its surface to the whole; hence, its use should always precede that of the map; (2) it affords a better means of explaining those points and mathematical lines a clear conception of the use of which forms the very groundwork of geographical science; (3) by means of it the teacher can illustrate the earth's motions, the causes of the seasons, day and night, etc.; and (4) many useful problems may be solved by means of it, as finding the longitude and latitude of places, the difference of time, the time of sunrise and sunset, and the length of the day at particular places, etc. Pupils in geography and astronomy should be thoroughly practiced in the working out of these problems on the globe, since they not only gain thereby much useful information, but acquire clear and durable conceptions of the elementary principles involved.

GOETHE, Johann Wolfgang von, an illustrious German poet, critic, and thinker, born in Frankfort on the Main, Aug. 28., 1749; died in Weimar, March 22., 1832. He was educated at the universities of Leipsic and Strasburg, and, in 1775, at the solicitation of the Grand Duke of Saxe-Weimar, whose interest in him had been aroused by his novel, *The Sorrows of Werther*, he visited Weimar, which he afterwards made his permanent residence. Philosophy, history, science, art, almost every subject of inquiry, in fact, claimed his attention, and led to frequent publications in the shape of novels, histories, plays, and poems. It is to Goethe that botany owes one of its fundamental conceptions, now generally admitted, that the various parts of a flower are modified leaves. With regard to education, Goethe's idea was, that its great aim should be the development and preservation of individuality. Every child is different from every other, and has special powers of its own; and the value of education consists in maintaining and developing these individual differences, and not in producing a dead level of character. The necessity of education lies in the fact that the child is undeveloped; and educational efforts must all be based on the principle that the germs of knowledge are in the soul. Hence, all true development must be from within outward. Education is not a pouring of knowledge into the mind, as into an empty vessel, but the development of faculties which are already there, as the growth of a plant from the seed. This development, too, must be general, in all directions. To cultivate any one faculty at the expense of others, produces monsters, not men. Nothing was more repulsive to Goethe than the mechanical, atheistic conception of the world. He insisted upon finding an ever-present Divinity in both nature and life. The recognition of this constitutes religion, and should be the aim of all education. This feeling should be so cultivated, that no circumstances can disturb in us a conscious sense of the Divine. Religious teaching should begin in the earliest childhood; not, however, by means of the catechism, or any other form of dogmatic instruction; but the child's imagination must be made familiar with the conception of a Divine Spirit underlying and interfusing every form of life. Ethics refer to moral conduct; hence, ethical culture must chiefly consist in practicing the good. Merely forbidding the bad is useless. Activity is a condition of moral as well as of physical health. Of all schools of morals and religion, the family is the most important. A low groveling home life will render all other teaching worthless. Next to the Bible, familiarity with the history of the great and good is the most important means of moral and religious culture. Instruction in the narrower sense of imparting knowledge must be rather synthetic than analytic. Building up teaches more than tearing down. Classical study is practically worthless so long as it is conducted solely by grammar and dictionary. We must work ourselves into the life of classical times in order to understand them. The study of Greek literature he regarded as far superior, for purposes of culture, to Latin literature; because the Greeks were far broader men. They saw nature and life in all their aspects; while the Romans saw only man; and him they regarded only as a warrior or a slave. Goethe did nothing for the systematic development of pedagogy. His views in regard to teaching are scattered through his works, and consist of hints rather than formulated rules. The great endeavor of his philosophy is to mediate between individualism and the stern necessities of society.—See SCHMIDT, *Geschichte der Pädagogik*.

GONIGRAPH (Gr. *γωνια*, an angle, and *γράφειν*, to write), an instrument used in kindergarten exercises and in object-teaching, to illustrate the nature and formation of angles and polygons. It consists of a series of narrow jointed slats of equal length, by the different combinations of which, figures of various shapes may be formed. The number of slats, or links, varies from 3 to as many as 16, or even more. As a piece of kindergarten apparatus (*gift*), the gonigraph may be made the means of much instructive entertainment to a young child, who from its manipulation will acquire ideas of a great variety of figures. In the more advanced object-teaching, in connection with the subject of *form*, it will be found very useful, as well as attractive. Gonigraphs are usually sold in sets as a part of the apparatus necessary for kindergarten work. (See GIFTS.)

GONZAGA COLLEGE, at Washington, D. C., was incorporated in 1858. It was formerly known as the Washington Seminary. It is conducted by the Fathers of the Society of Jesus. The college is intended for day scholars only, irrespective of creed or religious profession. The entire course covers seven years, comprising a preparatory and a collegiate department, with a classical and a non-classical course of study. In 1875—6, there were 5 instructors and 107 students. The library contains 10,000 volumes. The cost of tuition is $10 per quarter in either course. The Rev. Charles K. Jenkins, S. J., is (1876) the president.

GOODRICH, Samuel Griswold, better known as *Peter Parley*, was born in Ridgefield, Ct., Aug. 19., 1793, and died in New York, May 9., 1860. He was a voluminous writer, more especially of juvenile books, comprising histories, books of travel, geographies, and illustrative works on the arts and sciences. Some of his books, especially the histories, are still used as text-books in schools, and Spanish and Portuguese translations of some of them have found their way into South American institutions. In 1841, he established *Merry's Museum and Parley's Magazine*, a periodical for youth, which he conducted for thirteen years. His principal educational works are *Fireside Education* (1841) and *Illustrated Natural History of the Animal Kingdom* (1859). In 1851, he was appointed United States Consul at Paris.

GOVERNESS, or **Governante** (Fr. *Gouvernante*), a woman employed as a resident tutoress in a family, to conduct the education of children or young women. The employment of governesses began in the second half of the 17th century, when the French language and manners came into use among the upper classes of society throughout Europe. When a young lady who was not able to speak French fluently, and was not fully conversant with Paris fashions, came to be looked upon as lacking in refinement, it was natural that mothers should be anxious to secure the services of French teachers, especially Parisians, to give to their daughters the requisite training. The practice of employing governesses became, in a short time, equally common in England, Germany, and Russia. When this mode of educating young girls became popular, governesses were no longer exclusively taken from France, especially after the social ascendency of the French, in consequence of the revolution, had begun to decline. Then native governesses came into demand; and Germany and Switzerland began to compete with France in the sending of young women of education to England and Russia to seek a livelihood in this manner. The development which female education has since reached, has very considerably diminished the number and influence of governesses in Germany, and to some extent, also in Russia, since in both countries a steadily increasing number of girls and young women receive their education in seminaries and high schools established for the purpose. In France itself, where a governess is usually called *institutrice*, the number of governesses has always been comparatively smaller than in England, Germany, or Russia. In the United States, a larger proportion of young women than in any European country, finish their education in female academies and high schools, and more recently in colleges to which both sexes are admitted. Only in England has the employment of governesses, to any considerable extent, been maintained. Governesses are generally professional teachers who have received their education in training schools; and in French Switzerland, there are special schools for the instruction of governesses.

GOVERNMENT, School, like the government of a state, must be based upon the establishment of authority (q. v.), which includes not only the right to make laws, but the power, as well as the right, to execute them. These powers, in every civilized state and community, are distributed among different persons, so as to prevent centralized authority leading to despotism; but, in the little community of the school room, they must, to a greater or less extent, be possessed by one person. General rules for the management of a school, it is true, may be prescribed by the school officers to whom the teacher is amenable; but the actual government of the school, that which converts it from a chaotic, disorderly crowd of children into a regular organization, under control and discipline, must be exclusively the work of the teacher, hence called the *school-master*. Formerly, the powers of a school-master were much less limited than they are at present; indeed, they were almost absolute, the law, as in the case of parental government, only stepping in to protect the child from injury to life or limb. At the present time, the teacher's authority is carefully hedged around not only by the law, but by the rules of school boards and superintendents, so that the complaint is sometimes made by the teacher that he has scarcely enough authority left to enable him to govern his school. The policy of circumscribing the authority of the teacher to so great an extent is an unwise one, and endangers not only the efficiency of the school as an organization, but destroys its efficacy as an instrument of education. Besides, it implies that the teacher is unfit to exercise authority, either by lack of competency or of conscientiousness, which is equivalent to pronouncing him unfit to be a teacher at all.

The character of the school government depends upon the manner as well as the degree in which the teacher's authority is established; and the influence of the school upon the intellectual and moral character of its pupils will depend upon the kind of government maintained. No school can be efficient without order (q. v.), and order can only result from judicious and effective government. The latter must, in all cases, depend upon (1) the rules or requirements laid down, and (2) the manner in which they are enforced. Government is often impaired by unwise legislation—unwise in the kind of laws enacted, or in their number. The rules made for the government of a school should be as few and as simple as possible. A multiplicity of set regulations confuses the pupils, and tends to multiply offenses. Besides, the children, by the habit of complying with a kind of written law, are apt to think every thing right that is not specifically forbidden, and thus fail to exercise their conscience; that is, in their attention to the *mala prohibita*, they lose sight of the *mala per se*. "If a school," says D. P. Page, "is to be governed by a code of laws, the pupils will act upon the principle that whatever is not proscribed is admissible. Consequently, without inquiring whether an act is right, their only inquiry will be, is it forbidden? Now, no teacher was ever yet so wise as to make laws for every case; the consequence is, he is daily perplexed with unforeseen troubles, or with some ingenious evasions of his inflexible code. In all this matter, the worst feature is the fact that the child judges of his acts by the law of the teacher rather than by the law of his conscience, and is thus in danger of perverting and blunting the moral sense." Government by positive enactments is, therefore, to be dispensed with as much as possible; but such rules as are made should be strictly and uniformly enforced. These rules constitute what may be called *school legislation*, and are not to be confounded with requirements of a less formal character, which the pupil's own intelligence and sense of right are to be trained to recognize without particular enunciation, nor with those moral precepts which are addressed rather to the pupil as an individual, and therefore do not directly concern the organization of the school. We here treat of school government in the strict sense of the term. In the enforcement of school legislation, however, we are to keep in view the good of the pupil as well as the good of the school, but primarily the latter. The principle is this: The school is an organization designed to be the means of affording an education to a large number of pupils, and the school laws are made to protect that organization, and render it effective in the carrying out of its proper object; hence, the welfare of the school must be paramount to that of any individual pupil. The violation of a rule may, indeed, be sometimes overlooked without injury to the offender, perhaps to his benefit; but, as such a course tends to weaken or destroy the school government, the law must be uniformly enforced. No enforcement of law can be accomplished without the punishment of the offender; hence, the kind of school punishments that are suitable under the various circumstances that arise becomes a matter for the careful consideration of the teacher. Whether in enforcing obedience to wholesome regulations, corporal punishment should be resorted to, and, if so, to what extent and in what manner, forms also an important part of the general discussion of school government. (See CORPORAL PUNISHMENT.) But there must be prevention as well as correction—rewards, as incentives to obedience and good conduct, as well as punishments to chastise the wrong-doer, and deter others from wrong-doing. A system of rewards has a very important bearing upon school government when they are dispensed with uniformity and equity. Under this head are included merit marks, certificates and diplomas of proficiency and good conduct, and prizes. Many questions arise in connection with the administration of school government in this respect. (See PRIZES.) The general efficacy and propriety of rewards cannot be doubted. They appeal to a principle of human nature universally operative. "Whatever," says Jewell, "may be possible in the mature man, in the line of that sublime abstraction, 'Virtue is its own reward,' the child is neither equal to such abstractions, nor are they demanded of him." (See REWARDS.)

The efficacy of school government must depend very much on the manner in which the teacher exercises the authority conferred upon him in virtue of his office. If he bases it upon force, if the language he addresses to his pupils be uniformly that of command, threatening, or angry rebuke, there will be engendered in their minds a feeling of antagonism, from which will result disobedience, and occasionally open rebellion. On the other hand, if he is kind and considerate, but at the same time firm and resolute, he will gain first the respect of his pupils and then their affection. When that is accomplished, the government of his school will be quite easy. (See AUTHORITY.) The following are wise suggestions in regard to the proper course of the teacher in obtaining and preserving the control of his school: "(1) Endeavor to convince your scholars that you are their friend,—that you aim at their improvement, and desire their good. It will not take long to satisfy them of this, if you are so in reality. (2) Never give a command which you are not resolved to see obeyed. (3) Try to create throughout the school a popular sentiment in favor of order and virtue. It is next to impossible to carry into effect, for any length of time, a regulation, however important, which is opposed to *public opinion*." Fellenberg strongly insists upon this as the most efficient means of school government. "The pupil," he says, "can seldom resist the force of truth when he finds himself condemned by the common voice of his companions, and is often more humbled by censure from his equals, than by any of the admonitions of his superiors." To the above important injunctions for the teacher should be added the following: Observe in your conduct toward your pupils a strict impartiality. Children are keen observers, and at once detect the slightest indications of favoritism; and nothing more effectually than this destroys their respect for the teacher, and undermines his authority. Tact and self-control will enable the teacher to dispense, to a very great extent, with any decided demonstration of authority. "There is," says Page, "such a thing as keeping a school *too still* by over-government. A man of firm nerve can, by keeping up a constant constraint both in himself and pupils, force a death-like silence upon his school. You can hear a pin drop at any time, and the figure of every child is as if moulded in cast-iron. But be it remembered, this is the stillness of constraint, not the stillness of activity. There should be silence in school, a serene and soothing quiet; but it should, if possible, be the quiet of cheerfulness and agreeable devotion to study, rather than the 'palsy of fear.'" (See FEAR.) One of the most important means of effective school government is to keep the pupils constantly busy, to awaken in their minds an interest in their studies, to vary the exercises so as to prevent tedious monotony, to have special methods of relief, after their minds have become wearied by close attention. For this purpose, in primary schools, in which very young children are taught, movement exercises of a simple character may be resorted to; and, in all schools, vocal music, which always exerts the most pleasing and satisfactory influence. Calisthenics and gymnastics may be employed with good effect. In short, if the school is conducted in such a way as to recognize the peculiar nature, disposition, and wants of children, the school government will be found to involve but little difficulty. — See JEWELL, *School Government* (New York, 1866); PAGE, *Theory and Practice of Teaching* (N.Y., 1847); WICKERSHAM, *School Economy* (Phila., 1864); DUNN, *The School-Teacher's Manual* (Hartford, 1839); NORTHEND, *The Teacher's Assistant* (Boston, 1859); MORRISON, *Manual of School Management* (London); LE VAUX, *The Science and Art of Teaching* (Toronto, 1875).

GRADE (Lat. *gradus*, a step), the relative standing of schools, classes, or pupils, in a system of education. Thus education, or instruction, is designated, according to its grade, primary or elementary, secondary, and superior or higher. A course of study is divided into grades for convenience in classification, all the pupils in each class being supposed to be nearly of the same degree of proficiency. The number of grades into which a course of study should be divided is dictated by considerations of expediency and convenience. The grades, however, should be arranged so as to assign proper proportions of work for the several portions of time into which the school year, or the period of the entire curriculum, is divided. The arrangement of grades is also beneficial in definitely marking the progress of the pupil, and thus affording him encouragement to proceed by regular promotion from grade to grade. (See CLASS.)

GRADED SCHOOLS are usually defined as schools in which the pupils are classified according to their progress in scholarship as compared with a course of study divided into grades, pupils of the same or a similar degree of proficiency being placed in the same class. An ungraded school, on the other hand, is one in which the pupils are taught individually, each one being advanced as far, and as fast, as circumstances permit, without regard to the progress of other pupils. The *graded system* is thus based upon classification; and its efficacy as a system must depend very greatly upon the accuracy with which the classification has been made. Grades, however, are not to be confounded with classes; the former are divisions of the course of study based upon various considerations, the latter are divisions of the school based upon uniformity of attainments. In a small school, the same number of grades may be needed as in a large school, the course of study being the same, and the promotions being made with equal frequency; hence, as the number of classes must be smaller, it will be necessary that each class should pursue two or more grades simultaneously or in succession; that is to say, the promotions from grade to grade will be more frequent than from class to class. On the other hand, in a large school, the number of classes may be greater than that of the grades, which will necessitate the forming of two or more classes, under separate teachers, in the same grade. In the management of a large school, this will be found to be better than a subdivision of the grades, requiring either an extension of the time for completing the course, or greater frequency in the promotions. In the small district schools of the United States, the ungraded system prevails, because each school is taught by a single teacher, and sometimes there is a want of uniformity in text-books; but in the cities the graded system prevails. The advantages of the graded system have been thus enumerated : (1) They economize the labor of instruction; (2) They reduce the cost of instruction, since a smaller number of teachers are required for effective work in a classified or graded school; (3) They make the instruction more effective, inasmuch as the teacher can more readily hear the lessons of an entire class than of the pupils separately, and thus there will be better opportunity for actual teaching, explanation, drill, etc.; (4) They facilitate good government and discipline, because all the pupils are kept constantly under the direct control and instruction of the teacher, and, besides, are kept constantly busy; (5) They afford a better means of inciting pupils to industry, by promoting their ambition to excel, inasmuch as there is a constant competition among the pupils of a class, which cannot exist when the pupils are instructed separately. On the other hand, many objections have been urged against the system of graded schools, chief among which is, that the interests of the individual pupil are often sacrificed to those of the many, the individual being merged in the mass. "As a mechanism," says E. E. White, in *Problems in Graded School Management*, a paper read before the National Educational Association, Aug. 4., 1874, "it [the graded system] demands that pupils of the same grade attend school with regularity, and that they possess equal attainments, equal mental capacity, equal vigor, equal home assistance and opportunity, and that they be instructed by teachers possessing equal ability and skill. But this uniformity does not exist. Teachers possess unequal skill and power. Pupils do not enter school at the same age; some attend only a portion of each year; others attend irregularly; and the members of the same class possess unequal ability, and have unequal assistance and opportunity. This want of uniformity in *conditions* makes the mechanical operation of the system imperfect, and hence, its tendency is to force uniformity, thus sacrificing its true function as a means of education to its perfect action as a mechanism." There is no doubt that this difficulty is inherent in the system, and that no administration, however excellent, can wholly eliminate it. Various methods of procedure have, however, been suggested to diminish its injurious effects. That proposed by Superintendent W. T. Harris, of St. Louis, and carried out in the public schools of that city is frequent discriminative promotions. The following are the points on which the system is based: (1) The different rate of progress in study on the part of pupils of the same class, due to a difference in age, capacity, regularity of attendance, and opportunity; and (2) The continual diminution of the size of classes, particularly of the higher grades. "Provision," he says, "must be made for this difference in rates of progress by frequent reclassification; otherwise the school will become a lifeless machine." This arrangement, however, was a reaction against the system of annual promotions, which necessarily require wide grades and unfrequent changes in classification. The other extreme, according to the views of many educators experienced in school management and supervision, was approached in the recommendation by Superintendent Harris to require promotions as often as every ten weeks, and, besides that, to permit pupils "to move forward as fast as their abilities might permit." The objections to incidental discriminative promotion are the following: (1) It encourages precocity in the pupils; (2) It produces a tendency in the teacher to give an exclusive attention to the bright, intelligent pupils to the neglect of the dull ones, because in this way promotions are secured, which redound to the teacher's credit; (3) It deprives the pupils thus promoted out of the regular course, of the means of properly pursuing certain grades or parts of grades, inasmuch as, if placed from a lower grade into a class of pupils already advanced in the next higher one, they must take up the studies of that grade at the advanced point, without acquaintance with the preceding part of the grade, thus confusing the classification and embarrassing the teacher. Semi-annual promotions seem to be approved by the majority of educators, with such an adjustment of the number of the grades of the course of study and the requirements of each, as will enable pupils of an average capacity to complete the amount of study prescribed in the half year. There is another danger connected with the graded-school system, as sometimes administered, to which allusion is often made. It *prescribes* too much, leaving to the teacher too little scope for the exercise of individual skill, judgment, and intelligence. "It is not important," says Mr. White, "that the several teachers accomplish the same result day by day, or week by week. Nothing is more ridiculous than the attempt to parcel out primary instruction, and tie it up in daily or weekly prescriptions, like a doctor's doses. This week the class is to take certain facts in geography; to count by twos to fifty (to sixty would be a fearful sin!); to draw the vertical lines of a cube; to learn to respect the aged, etc.!" This, however, with many other objections which are urged against the system of graded schools, is only a fault in administration. A system of this kind requires intelligent, earnest, and judicious direction and supervision; with this, ably seconded by well-trained and experienced teachers, it will approximate to individual teaching, and, in the powerful and wholesome stimulus which it constantly applies to the pupil, prove much more effective.

Graded schools are far more numerous in the United States than in England, or in most of the countries of continental Europe. The system is, however, beginning to be introduced. "The plan of teaching classes or grades in separate schoolrooms has been adopted," says Adams (*Free School System of the United States*, 1875), "in some of the Birmingham Board schools, and also in London, I believe, and has given great satisfaction." So essential has it been considered in the United States to the efficiency of a school that it should be graded, that no aid is given from the Peabody Fund except to graded schools.—See Wells, *The Graded School* (New York, 1862); Wickersham, *School Economy* (Phil., 1868); Kiddle, etc., *How to Teach* (N.Y., 1874). (See also Class, and Grade.)

GRADUATE (Lat. *graduare*, from *gradus*, a step or degree), to confer an academic degree, thus advancing to a higher rank in scholarship; also, to receive a degree from a college or university. A person is said to graduate when he takes a degree, and the college or university is said to graduate a student when it admits him to an honorable standing as a scholar by conferring a degree. The person who thus takes a degree, is called a *graduate*. (See Degrees.)

GRAEFE, Heinrich, a German educator, born March 3., 1802; died July 22., 1860. He was successively rector of the real school and professor at the university of Jena, rector of the burgher school in Cassel, principal of an educational institution at Geneva, and director of the industrial school at Bremen. He was also an influential writer upon educational topics. His discussions of the methods of German public-school instruction are his most important productions. His general theory of education is similar to that of Graser. Like him, he was strongly opposed to merely general culture, because the idea of education is not only to develop the faculties, but to fit one for the duties of life. The true end of man, according to Graefe, is self-surrender to the Divine will; and the aim of education is to bring the individual into active and conscious self-abnegation. Not to develop ourselves, but to do the will of God by filling the place in society which belongs to us, this is the end of our being. Graefe made very valuable suggestions for the modification of public-school instruction in the direction of securing a more natural arrangement of study, and better physical culture.—See Schmidt, *Geschichte der Pädagogik*, vol. iv.

GRAHAM, Isabella, celebrated for her efforts for the relief and education of the poor, and in behalf of other philanthropic objects, was born in Lanarkshire, Scotland, in 1742, and died in New York, in 1814. She was the wife of Dr. John Graham, an army surgeon, after whose death, in the West Indies, in 1774, she taught school in Paisley and in Edinburgh. In 1789, she came to New York, and opened a seminary for young ladies. Her active, benevolent disposition had shown itself in her native country in the formation of the Penny Society, now the Society for the Relief of Destitute Sick. In New York, mainly through her efforts, were established the Society for the Relief of Poor Widows, the Orphan Asylum Society, the Society for Promoting Industry among the Poor, and a Sunday School for Ignorant Adults,—the first of its kind in the United States. Her benevolent labors in almost every field of philanthropic enterprise were very extensive. Her memoirs were published by Dr. Mason (1816), and her correspondence, by her daughter, Mrs. Bethune, mother of G. W. Bethune, D. D. (1838).

GRAMMAR (Gr. γράμμα, that which is graven or written, a written character, a letter) means, in the widest sense of the word, the science of language in general, and specially an exposition of the organism of language and the laws of its structure. The first scientific investigations in language are met with in the writings of the Greek philosophers; they are, however, not of a strictly grammatical nature, but discuss the relation of thinking to speaking, and the origin of language. Such speculations are found in Plato, Aristotle, and the Stoics. The first attempt to construct a grammar, in the present sense of the word, was made in the second century, B. C., at Alexandria. The Greek grammarians, at that time, explained the works of the classic authors, and such explanations embraced the definition and analysis of words. Dionysius Thrax divided grammar into six parts: delivery, explanation of the contents of the classics, definitions, etymology, analogy, and criticism. The Roman grammarians explained the works both of Latin and Greek authors, paying special attention to the explanation of archaic and obscure expressions; but they made no real progress in the development of grammatical science. Nothing at all was done during the middle-ages, the schools contenting themselves with teaching Latin from the works of the later Roman grammarians. The revival of classical studies and the Reformation, in the sixteenth century, led to a more thorough study of the Latin and Greek languages, and enlarged the views of grammarians by adding the knowledge of Hebrew to their stock of linguistic attainments, which were formerly limited to Latin and Greek. Several Latin, Greek, and Hebrew grammars were published, and a beginning was made in the preparation of grammatical works on some of the modern languages. The first attempts at general and comparative grammars were made in the 17th century. A new impulse was given to grammatical studies, after the Sanskrit language and literature had become more generally known among philologists. A solid basis for comparative grammar was laid by Bopp, who, in his first comparative work (1816) on the Indo-European languages, compared the inflections of Sanskrit words with those of the Greek, Latin, Persian, and Germanic languages; and, in the great work of his life, the Comparative Grammar of Sanskrit, Zend, Greek, Latin, Lithuanian, Old Slavic, Gothic, and German (*Vergleichende Grammatik*, 5 vols., 1833—52; 3d ed., 1868—71; translated into English and French) traced back the Indo-European languages to their origin, and pointed out their present relations to each other. The idea of a historical grammar was fully developed by Grimm in his German Grammar (*Deutsche Grammatik*, 4 vols., 1819—37), which traces the history of all grammatical forms in the Germanic dialects through the different periods of the language. Other master-works in the literature of comparative grammars are those by Diez on the Romanic languages (*Vergleichende Grammatik der romanischen Sprachen*, 3 vols., 1836—42), by Miklosich on the Slavic languages (*Vergleichende Grammatik der slavischen Sprachen*, 1852—71), and by Schleicher, on the Indo-Germanic languages (*Compendium der vergleichenden Grammatik*, 3d ed., 1871). Comparative grammars on Indo-European Languages by English authors are: Clark, *Student's Handbook of Comparative Grammar, applied to the Sanskrit, Zend, Greek, Latin, Gothic, Anglo-Saxon, and English Languages* (London, 1862); Ferrar, *Grammar of Sanskrit, Greek, and Latin* (vol. i., Lond., 1869); Helfenstein, *A Comparative Grammar of the Teutonic Languages* (London, 1870); Beames, *Comparative Grammar of the Modern Aryan Languages of India;* March, *A Comparative Grammar of the Anglo-Saxon Language* (N.Y., 1871). But few comparative grammars have as yet been written on other than Indo-European languages. The more important of them are: Bleek, *A Comparative Grammar of the South African Languages* (vol. i., London, 1869); Caldwell, *Comparative Grammar of the Dravidian Languages* (London, 1861)*;* Pimentel, *Cuadro descriptivo y comparativo de las lenguas indígenas de México—Descriptive and comparative table of the native languages of Mexico* (Mexico, 1874)*;* and Epstein, *Cuadro sinoptico de las lenguas indígenas de México* (Mexico, 1874). The most important work on the philosophy of language is still the classic work by Wilhelm von Humboldt, *Ueber die Verschiedenheit des menschlichen Sprachbaues* (1836), which originally appeared as an introduction to his work on the Kavi language. Among other important works for the study of general grammar, are: Heyse, *System der Sprachwissenschaft* (Berlin, 1856), and Steinthal, *Characteristik der hauptsächlichsten Typen des Sprachbaues* (2d edit., 1860); also, for an excellent and familiar exposition of linguistic science and history, Max Mueller, *Lectures on the Science of Language* (2 vols., London, 1861—4)*;* and Whitney, *The Life and Growth of Language* (New York 1876).—The study of grammar now constitutes, in every civilized country, an essential part of the learning of languages, both the vernacular and foreign. Opinions, however, still widely differ as to the place which grammar should occupy in the study of language, the method by which it should be taught, the point of time at which it should be begun, and the amount of time which should be devoted to it. There is at present a more general agreement among educators than at any previous time, that not only is a grammatical knowledge necessary for a good command of any language, but that thorough training in the rules of grammar is one of the best means to develop the faculties of the mind, and is especially calculated to promote correct and logical thinking. (See Grammar, English; English, Study of; Classical Studies; Modern Languages; and the special articles on Greek, Latin, Hebrew, French, German, etc.)

GRAMMAR, English, has for its special function, an exposition of the specific organism and the structural peculiarities of the English language. There are certain relations existing between thought and language which must underlie every form of human speech; these constitute the basis of general grammar. Every language has its peculiarities of (1) literal representation and combination (letters and words—orthography), (2) inflectional forms (etymology), (3) sentential structure (syntax), and (4) vocal utterance (prosody). These peculiarities it is the office of specific grammar to explain, so that they may not only be grasped by the understanding but worked into the habitual use of the language, in speaking and writing. English grammar has been defined as "the art of speaking and writing the English language correctly;" and as an *art*, doubtless, this states correctly its practical object, for it can have no other. This was the view taken by the early grammarians. "The principal design of a grammar of any language," says Bishop Lowth, "is to teach us to express ourselves with propriety in that language; and to enable us to judge of every phrase and form of construction, whether it be right or not." Those who teach grammar, as well as those who compile grammatical text-books, should constantly keep this practical aim in view, eliminating from their systems of instruction every thing that does not directly bear upon it. "To explain," says Mulligan (*Grammatical Structure of the English Language*, N.Y., 1852), "the *laws* of artificial language is the particular province of him who proposes to teach the *science* of grammar; to guide to the proper *use* of the signs of artificial language, and to the correct interpretation of the thoughts of others embodied in language, so far as this can be effected by reference to the *laws* and *usages* of language, is the province of him who proposes to teach grammar as an *art*." Processes of analysis and rules of syntax are entirely useless, except so far as they contribute to this end. Viewed from this stand-point, very much of the machinery of English grammar, so called, as taught in schools, is of no practical value to the pupil, but, on the contrary, serves to waste his time and intellectual energies. This has arisen from the application of a traditional nomenclature and system of definitions and rules to the English language, which belonged to the Latin. "The manuals, by which grammar was first taught in English," says Goold Brown, were not properly English grammars. They were translations of the Latin accidence; and were designed to aid British youth in acquiring a knowledge of the Latin language, rather than accuracy in the use of their own. The two languages were often combined in one book, for the purpose of teaching sometimes both together, and sometimes one through the medium of the other." Richard Grant White, in *Words and their Uses* (N. Y., 1870), also says, in this connection, "It was not until English had cast itself firmly and sharply into its present simple mould that scholars undertook to furnish it with a grammar, the nomenclature and the rules of which they took from a language — the Latin — with which it had no formal likeness, and by the laws of which it could not be bound, except so far as they were the universal laws of thought." This circumstance, it has been frequently asserted, has led to a complexity in English grammar which is not found in the language itself; and hence also it has been claimed that the practical results of teaching English grammar can be reached by a much shorter and more effective process. Without doubt, according to the modes of instruction long prevalent, too much time has been given to impressing upon the memory mere theory, — technical definitions and rules, without a corresponding amount of practice in the actual use of language. This also has been traditional, emanating from the practice of teaching Latin. The more recent methods adopted by practical teachers, as well as embodied in text-books, have introduced considerable reform in this respect. (See ENGLISH, THE STUDY OF.)

The first attempt at an English grammar was *Paul's Accidence*, an English introduction to Lily's Latin grammar, written by Dr. John Colet, dean of St. Paul's, for the use of the school founded by him, and dedicated to William Lily (q. v.), the first high master of that school (1510). Lily's grammar was the exclusive grammatical standard in England for more than 300 years, having received the sanction of royal authority; but the first book exclusively treating of English grammar was that of William Bullokar (*A Bref Grammar for English*, London, 1586). This was followed by John Stockwood's *English Accidence* (4to, London, 1590). During the next century, several works of the kind appeared, among which may be mentioned, Ben Jonson's *English Grammar for the benefit of all strangers, out of his observation of the English Language, now spoken and in use* (London, 1634); Charles Butler's *English Grammar* (4to, Oxford, 1633), which we find quoted by Dr. Johnson in the Introduction to his Dictionary; and the Rev. Alex. Gill's English grammar written in Latin (*Logonomia Anglica Grammaticalis*, London, 1619—21); also an English grammar written in Latin for the use of foreigners, by Rev. John Wallis, D. D. (London, 1653), from which, it is said, Johnson and Lowth borrowed most of their rules. The *Treatise of English Particles* (1684), by William Walker, the preceptor of Sir Isaac Newton, was a work of great learning and merit. This was also written in Latin. Besides these, there were several others of lesser note. During the 18th century, many grammars appeared previous to the more noted ones of Lowth and Murray. The latter enumerates, as the authors to whom he was chiefly indebted in the compilation of his work, Harris, Johnson, Lowth, Priestley, Beattie, Sheridan, Walker, and Coote. Many of these writers appreciated the grammatical simplicity of the English language, and to some extent adapted their grammars to it. Bishop Lowth remarked in his preface, "the construction of this language is so easy and obvious, that our grammarians have thought it hardly worth while to give us any thing like a regular and systematic syntax. The English grammar, which hath been late presented to the public, and by the person [Dr. Johnson] best qualified to have given us a perfect one, comprises the whole syntax in ten lines, — for this reason: 'because our language has so little inflection, that its construction neither requires nor admits many rules.'" Brightland's *Grammar of the English Tongue, with the Arts of Logick, Rhetorick, Poetry, etc.* (London, 1711), was a valuable and celebrated work, said to have been composed by some of the most prominent literary men of Queen Anne's reign. It was not, however, extensively adopted. Bishop Lowth's *Short Introduction to English Grammar* was published in 1758. "It was calculated," he states in his preface, "for the use of the learner, even of the lowest class"; and for fuller information he refers to the *Hermes* (*A Philosophical Inquiry concerning Language and Universal Grammar*, 1751) of James Harris, which he styles "the most beautiful and perfect example of analysis, that has been exhibited since the days of Aristotle." The learned Dr. Priestley's *Rudiments of English Grammar* (London, 1762) was designed only as a brief introduction to the subject; indeed, he considered that the forms and usages of the language were not sufficiently settled and uniform to admit of a complete grammar of the language. Lindley Murray published his first Grammar in 1795 (*English Grammar*, York), soon followed by various other auxiliary works, all of which, almost immediately, secured an introduction into schools. Of the *Abridgment* (12mo, 1797), very many editions have been issued, both in England and the United States. The annual sale of the book in England has been estimated at 50,000 copies. The most valuable part of the materials of which this work is composed, was taken from Lowth, as well as its general plan. Dr. Cheever (in *N. Amer. Rev.*, xxxi., 377) calls it "an enlarged copy of Lowth," and says of the latter, "Although Lowth's treatise was written so early as the year 1758, yet we doubt whether there is at the present day a single work of equal excellence in the same compass." Murray also copied extensively from Priestley; "with several of the best English Grammars published previously to his own," says Goold Brown, "he appears to have been totally unacquainted." This laborious writer who, in his *Grammar of English Grammars* (New York, 1851), so mercilessly reviews and criticises the works of his predecessors and contemporaries in grammatical authorship, exposes and condemns with unmeasured severity the plagiarism and defects of Murray's grammar. "There is no part of the volume," he says, "more accurate than that which he literally copied from Lowth. To the *Short Introduction* alone, he was indebted for more than a hundred and twenty paragraphs; and even in these there are many things obviously erroneous. Many of the best practical notes were taken from Priestley, etc." (*Gram. of Eng. Gram.*, ch. III.) And, in the same critical invective, he pronounces the following wholesale condemnation: "It might easily be shown that almost every rule laid down in the book for the observance of the learner, was repeatedly violated by the hand of the master. Nor is there among all who have since abridged or modified the work an abler grammarian than he who compiled it." But whatever the merits or demerits of Murray's grammar, and whatever may be the source of its materials, it doubtless owed its extraordinary success as a school book to its practical adaptation to the purposes of school instruction, and to the demand which previous publications had created for such a work. Since its publication, the number of English grammars published is "legion," among which those of Goold Brown may, without doubt, claim precedence for popularity and extensiveness of sale in the United States. This author laid down a canon in regard to grammatical authorship which, while it is perhaps alleging too much to say that he has strictly obeyed it, it is to be wished, might receive a more general attention: "He who makes a new grammar does nothing for the advancement of learning, unless his performance excel all earlier ones designed for the same purpose; and nothing for his own honor, unless such excellence result from the exercise of his own ingenuity and taste." The earliest of Brown's grammars was *The Institutes of English Grammar* (New York, 1823, revised ed., 1854), which was followed, the same year, by *The First Lines of English Grammar*, an abridgment of the former. These books have had an immense circulation, and are still (1876) very extensively used in all parts of the United States. The *Grammar of English Grammars*, the most comprehensive work on the subject yet published, was completed in 1851. Many other text-books upon English grammar, of great merit, have been published both in England and this country, for the titles of which, see ENGLISH, THE STUDY OF.

The methods of instruction embodied in Murray's and Brown's grammars, and in those of most of their competitors for public favor, consisted mainly in committing to memory definitions and rules, in applying these, for the purpose of practice, to various styles of composition by *parsing*, and in the *correction of false syntax*. Most of the later grammars vary or precede these exercises with the *analysis of sentences*, affording practice in the principles of general grammar, as preliminary to special rules. (See ANALYSIS, GRAMMATICAL.) Still more recently, a different class of elementary grammatical text-books have appeared, under the name of *Language Lessons*, the special design of which appears to be, to supply considerable practice in the actual use of language, as a substitute, to some extent, for analysis and parsing. Probably, there is no subject that has been taught with so great a disregard of the fundamental principles of teaching as English grammar; and there is certainly none that has so imperfectly attained its practical aim — correctness in the use of language. This has arisen from two errors of procedure: (1) an attempt to teach definitions without developing in the minds of the pupils the ideas underlying them, and rules previous to an illustration of their necessity; and (2) confining the instruction to merely theoretical and critical work, without sufficient practice in the application of principles and rules to the actual use of language. The introduction of analysis was the result of an effort to reform the first of these errors; and the language-lesson system, a reaction against the second. Grammar being, distinctively, the *science of the sentence*, the preliminary step in all grammatical instruction must be, to give to the pupil a clear and correct idea of what constitutes a sentence, by presenting for his examination and analysis examples of sentences of a simple structure, by analyzing which he will easily be made to see what principal parts must enter into their composition, and how other parts are used as adjuncts. (See ANALYSIS, GRAMMATICAL.) The outline of a complete scheme of teaching grammar in all its stages is presented in the following points: (1) Principles, definitions, and rules should be progressively taught by requiring the pupil to analyze, and also to construct, classified sentences commencing with those of the simplest construction, and passing gradually to such as are of the most complex structure; (2) No definition or rule should be committed to memory and formally recited until the pupil, by sufficient practice, has obtained a clear conception of the office of the word defined, and the nature of the usage which the rule is intended to guide. For example, it is absurd to try to teach a child the meaning of a participle or a relative pronoun at an elementary stage of the instruction, because the structures in which alone they can occur are too complex to be understood at that stage. And it is equally absurd to require a child to commit to memory the rule, "A verb must agree with its subject or nominative in person and number," until by the comparison of a number of sentences illustrating this usage, he is made to understand what is meant by *agreement* in grammar, and how expressions may be incorrect by a failure to observe this rule. According to this method, the pupil is first made acquainted with the distinction of *subject* and *predicate*, as being the essential parts of every sentence. This forms the basis for teaching him the two parts of speech,—the verb and the noun. From this point, the sentence may be complicated by the successive insertion of modifying words, phrases, or clauses, so as to illustrate not only the nature and use of each of the parts of speech, but every peculiar structure. This may be illustrated by the following example of a sentence thus expanded: (1) *Boys learn.* (2) *The* boys learn. (3) The *studious* boys learn. (4) The studious boys learn *rapidly.* (5) The studious boys learn *their lessons.* (6) The studious boys learn their lessons *in school.* (7) The boys *and* girls learn. (8) The boys learn, *but* the girls do not learn. (9) The boys *who* study will learn. Of course, each sentence here given is only a specimen of what may be used at each step; and when these several steps have been taken, the pupil will have acquired a knowledge of the functions of the different parts of speech. Thus, in (1), he learns the noun and the verb; in (2), the article is added; in (3), the adjective; in (4), the adverb; in (5), the pronoun; in (6), the preposition; in (7), the conjunction, as a connective of words; in (8), the conjunction, as a connective of sentences; in (9), the relative pronoun. After much preliminary oral instruction of this kind, the pupil may be required to learn simple definitions. Underlying the whole process, it will be perceived, is the *analysis* of the sentence, *parsing* coming in at a later stage, as the application to particular sentences, according to a given *praxis*, of the definitions and rules learned. This is the method recommended by prominent educators of the present day. "The analysis of a sentence," says Wickersham, "consists in finding its elements, or in reducing it to the parts of speech, of which it is composed. Parsing consists in finding out these parts of speech and determining their properties and relations. Both should be combined, as is the case in similar operations in other sciences. The botanist analyzes a plant, and then names and describes its several parts. The anatomist dissects a subject, and then characterizes the organs thus brought to his notice. Grammar can be studied successfully in no other way. Parsing, without a preceding analysis, can lead but to a very imperfect knowledge of the organic structure of sentences." To the value of the analytical method, Prof. Whitney thus bears witness: "Give me a man who can, with full intelligence, take to pieces an English sentence, brief and not too complicated even, and I will welcome him as better prepared for further study in other languages than if he had read both Cæsar and Virgil, and could parse them in the routine style in which they are often parsed." Parsing should not be made a routine; when it becomes such, it is worse than useless. The constant application of complicated definitions and rules derived from a language of inflections, to English words and sentences having scarcely an inflection, is to the pupil a senseless process, and must only tend to dull, instead of cultivating and sharpening, his intellectual faculties. It makes him, as has been said, a "parsing machine." The definitions and rules of English grammar should be simplified, recognizing the fact that English is not an inflectional language, except in a very few particulars; and hence, that the principles of *agreement* and *government* have scarcely any application. The multiplying of rules that regulate nothing is idle. Thus, of what use is it to cause a child to repeat, in parsing, twenty times perhaps in a single lesson, the so-called syntactical rule, "Adjectives relate to nouns and pronouns," when he has already learned as a definition that "Adjectives are words added to nouns and pronouns?" The editor of the last edition of Brown's *Institutes of English Grammar* remarks, in an *Observation* on the treatment of *Syntax* in that work, "Nearly one half of the twenty-six rules of syntax laid down in this work are rather a repetition of the definitions comprehended in etymology than separate rules necessary to guide us in the construction of sentences"; and the same may probably be said of most grammars. All such needless machinery should be eliminated. The application of the terms *case*, *gender*, *person*, and all other designations of inflectional variations of words, should be kept within the narrow limits prescribed by the simplicity of the language. In most systems of grammar, however, we find these terms used in so ambiguous a way as almost hopelessly to obscure the subject and perplex the learner. Sometimes, for example, *case* is used to indicate a form or inflection, at others, a mere relation without change of form; while the fact to be taught is, that where there is no inflection there is no case. The rule that "a noun which is the subject of a verb must be in the nominative case" is, in English, useless and absurd. The senseless machinery of English grammar, as it has been generally taught, has brought the whole subject under reprobation, as being useless in an elementary school curriculum, and as superseded in that of the high school and college, by the study of Latin; while there is no doubt that college graduates, in the United States, are generally in nothing so deficient as in a practical and critical knowledge of their own language. While it is very true that the use of every language is a matter of habit rather than of rule; every writer and speaker knows, that there are myriads of instances in which the ear and the memory, however trained by habit, will not serve as a guide, and that a knowledge of the principles and usages of language in regard to nice points of construction, is indispensable. "Since language," says Currie, "is the instrument of all thought, a more commanding knowledge of it than habit alone can give must be deemed a necessity of education, and particularly of all education which pretends to cultivate the mind."—See Currie, *Principles and Practice of Common-School Education* (Edin. and Lond.); Wells, *The Graded School* (N. Y., 1862); Wickersham, *Methods of Instruction* (Phila., 1865); Kiddle &c., *How to Teach* (N. Y., 1874); Brown, *Grammar of English Grammars* (N. Y., 1851); White, *Words and Their Uses* (N.Y., 1870); Marcel, *The Study of Languages* (N. Y., 1876). (See also English, The Study of

GRAMMAR SCHOOLS, so called, not because they gave instruction in English grammar, but from the fact of their making the teaching of Latin and Greek — particularly, and sometimes exclusively, the former—their especial aim, existed in England from the earliest times. They discharged the same function as the old cathedral schools (q. v.), or the cloister schools of the monasteries, and were established and supported either by the endowments of benevolent individuals, or by governmental appropriations. In England, the endowed grammar schools are very numerous and many of quite ancient foundation. Quite a number of Royal Grammar Schools were established during the reigns of Henry VIII., Edward VI., and Elizabeth, from funds obtained out of the spoils of the religious houses of the Catholics, broken up at that time. To a certain extent, they were free schools. "A few of the poor," says Barnard, "who were unable to pay for their education were to be selected — some according to the parish in which they were born or lived, some on account of the name they bore, — and to receive instruction in the learned languages, and, under certain conditions, to be supported through the university. These Public Grammar Schools were thus the nurseries of the scholars of England, in them the poor and the rich, to some extent, enjoyed equal advantages of learning, and, through them, the way to the highest honors in the state, and the largest usefulness in the church was opened to the humblest in the land." Endowed grammar schools whose foundation dates back to quite early times exist in almost all the principal towns of England. They are generally both day and boarding schools. Of these the Grammar School of King Edward VI., at Bromsgrove, is an example, of which the tercentenary commemoration of the foundation was celebrated March 31., 1853. (See *Proceedings*, 8vo, Bromsgrove, 1853.) As a curious old book on this subject see Brinsley's *Ludus Literarius, or the Grammar Schoole* (London, 1612). The course of instruction is about the same as in the Public Schools, such as Eton, Harrow, etc., Latin and Greek being quite prominent; and, in both classes of schools, pupils are prepared for admission into the universities. These grammar schools are, therefore, the same as what have been called *classical schools*, belonging to the class of *middle schools*, and representing *secondary instruction*. They correspond to the *gymnasia* of Germany and the *lycées* of France; in the latter, however, there is a course of instruction in modern languages, running parallel with the ancient course, for all pupils beyond a certain age. Long before the Reformation, there were grammar schools in all the principal towns of Scotland, in which the Latin language was taught. In the *lecture schools* children were also taught to read the vernacular language. In Glasgow, a grammar school was in operation in the 15th century; and the Edinburgh High School, in the early part of the 16th century. An act of James IV.— the earliest Scottish legislation on the subject of education (1494)—refers to the grammar school, especially :

> "Item, It is statute and ordained through all the Realme that all Barronnes and Freeholders that are of substance put their eldest sonnes and aires to the schules fra they be sex or nine yeires of age, and till they remain at the Grammar Schules quhill they be competentlie founded and have perfect *Latine*".

Grammar schools, in the United States, were originally of the same character as in England and Scotland. "By *free school* and *free grammar school*," says Barnard, "in the early records both of towns and of the General Court of Connecticut and Massachusetts, was not intended the common or public school, as afterwards developed, particularly in Massachusetts, supported by tax and free of all charge to all scholars rich and poor; neither was it a charity school, exclusively for the poor. The term was applied here, as well as in the early acts of Virginia and other states, in the same sense in which it was used in England, at the same and much earlier dates, to characterize a grammar school unrestricted as to a class of children or scholars specified in the instrument by which it was founded, and so supported as not to depend on the fluctuating attendance and tuition of scholars for the maintenance of a master. In every instance in which we have traced their history, the *free schools* of New England were endowed by grants of land, by gifts and bequests of individuals, or by 'allowance out of the common stock of the town', were designed especially for instruction in Latin and Greek, and were supported in part by payments of tuition or rates by parents. These schools were the well-springs of classical education in this country, and were the predecessors of the incorporated academies, which do not appear under that name until a comparatively recent period." The gradual development of the common-school system in the United States, joined with the partial decline of Latin and Greek as instruments of education, and the demand for studies of a more practical character, that is, more in demand as a preparation for the ordinary duties of life, have led to a different application of the term *grammar schools*. The study of English grammar having taken the place of Latin grammar in schools of an elementary grade, such schools came to be designated *grammar schools*, and the former grammar or classical schools received the name of *high schools* or *academies*. In most of the public-school systems of the cities of the Union, grammar schools are schools of a grade between the primary schools in which the first rudiments of instruction are imparted, and the high schools. Some of the grammar schools, so called, have a primary, an intermediate, and a grammar department. In these cases, the term *grammar schools* has been used with no definite idea of its propriety, except as designating a somewhat higher grade of schools than those in which the simplest rudiments of an English education are afforded; since even in these English grammar is taught in only the higher grades or classes.—See BARNARD, *Education in Europe*; and *American Biography*, s. v. *Ezekiel Cheever*.

GRASER, Johann Baptist, a Catholic priest and educator, born in Eltmann, Germany, in 1766; died in 1841. He aroused considerable opposition, especially among the Catholic clergy, by his educational theories. He insisted that education should not aim at general culture, but at a preparation for life. Class education was particularly favored in his doctrine. His general theory of education was derived from Schelling's philosophy. The essence of man is reason; and the aim of reason is to reproduce the divine likeness. A knowledge of human life, in its relation to nature and God, is necessary to every one; and no power should deprive any one of it. The aim of this general culture should be to produce a feeling of solidarity. Every one should be made to feel that he lives not for or in himself alone. Specific education must be individual, since it aims to prepare each one for his future position in life. The idea of general culture is contradictory to nature, and is dangerous withal. It is apt to produce restless, dissatisfied people, rather than useful members of society. With Graser, as with Cæsar, men who think too much were considered dangerous. In imparting knowledge, the teacher should strive to develop the student's powers. All teachers of whatever subject, should consider themselves as teachers of religion, for no knowledge is complete until its object is seen in its relation to God. Graser's theory, like that of Fichte, subordinates the individual to the state in so despotic a fashion as to reduce the former to a mere tool. It was largely a reaction, in the interest of government, from the individualism which was at that time leavening all Europe. It was due, therefore, less to an insight into human nature than to the political exigencies of his time. His polemic against general culture is due to the same cause. His class education fits well in a despotic system of government, but overlooks the fact that man is, first of all, called to be a man, and not a tradesman or a mechanic. His leading idea, though by no means originating with him, was, that education is properly a self-culture, — an unfolding from within. His philosophy had a marked effect upon his theory of religious views. As a follower of Schelling, he believed in an immanent God, and was impatient, therefore, of catechetical instruction in religion. God must be found every-where, according to him, — in man, in the world, and not alone outside of them. Catechism he considered as having a tendency to irreligion and rationalism. A one-sided mysticism characterizes his theory, which gave rise to the charges of heterodoxy, which were brought against him. — See SCHMIDT, *Geschichte der Pädagogik*, vol. IV.

GREAT BRITAIN AND IRELAND, the United Kingdom of. This is the official title of the British empire, Great Britain being properly the name of the island which comprises England, Scotland, and Wales. In current language, however, the name *Great Britain* alone is generally used to designate the whole imperial power. At present, the British empire, in point of extent, is the largest in the world, its area being estimated at 8,700,000 sq. m. Its aggregate population exceeds 283,000,000. This work contains special articles on ENGLAND, SCOTLAND, IRELAND, also on each of the provinces of British North America, on British India, and on the Australasian Colonies (qq. v.).

GREECE, a country of south-eastern Europe, having an area of 19,353 sq. m., and, according to the census of 1870, 1,457,894 inhabitants, nearly all of whom speak the Greek language, and are connected with the Greek Church. The number of those who speak other languages is only 68,000, and the number belonging to other religious denominations, only 12,600. Greece, anciently called Hellas, is the earliest of all the European countries, that appear upon the stage of the world's history; and though the Greek states have, for many centuries, ceased to exist, the language and literature of the Greek nation have, in uninterrupted continuation, been instruments in the education of mankind. The limits of ancient Greece were not well defined, as the northern boundary line considerably varied at different periods. Of territories now subject to Turkish rule, the Sporades, Crete, Rhodes, and parts of Thessaly and Epirus are generally included in ancient Greece, and are inhabited by Greeks at the present day. Numerous and flourishing colonies were established by the ancient Greeks, or Hellenes, in many countries, especially in Sicily, southern Italy, and Asia Minor, and, for a long time, took an active part in the literary and educational development of the race. · In 146 B. C., Greece became a Roman province; and for more than four centuries the Hellenic nation remained subject to foreign rule. The division of the Roman Empire, in 395, created the Greek Empire, of which Constantinople was the capital, and which embraced, for a long time, not only the Greek territory now belonging to the kingdom of Greece, but both the European and Asiatic portions of the Turkish empire. The empire was destroyed, in 1453, by the Ottomans, or Turks; and the Greeks continued for centuries without national sovereignty, until, in 1829, the establishment of the kingdom of Greece restored to them a place among the independent nations of the earth. We shall treat, in this article, of (I) Ancient Greece, (II) the Greek Empire, and (III) Modern Greece.

I. *Ancient Greece.* — In the history of education, the ancient Greeks hold a more prominent position than any other people of antiquity. They attained a far higher degree of intellectual development than existed in the Asiatic or African monarchies which preceded them; or in the Roman republic, the Roman empire, and the rising monarchies of the middle ages, which came after them. It needed the revival of classical learning, in the 15th century, to raise the intellectual culture of Europe again to the level of ancient Greece. Since then, the Greek language and literature have had a prominent part in the development of modern civization. The progress of modern literature, especially of history, mathematics, philosophy, the fine arts, natural science, and geography, is largely due to the writings of the Greek scholars who were the first notable teachers of these subjects, and who, during the last four centuries, have been studied by so large a number of the young students of the civilized world. The great orators of ancient Greece have not yet ceased to be admired; and the greatest poets of the English language and of other modern tongues have not only derived from the masterpieces of the Greeks, inspiration and the laws of literary composition of every kind, but in many cases, modern poets have borrowed from them even the subjects of their poems.

The earliest feature of education in ancient Greece, as we infer from the Homeric poems and other writings of that period, was the implanting of a strongly filial attachment in the minds of children, and the ennobling influence of parental discipline and example. Reverence and obedience toward parents, respect for old age, and habits of modesty, chastity, and silence in the presence of elders and superiors were regarded as the chief ornaments of children. The principle was generally recognized, that he who is to be called upon to command, must first learn to obey. Plainly and artlessly, sons and daughters were brought up to be the images of their parents. The son found in his father his model and his teacher, who instructed him in the use of arms, in gymnastic exercises, and in the worship and fear of the gods. The daughter was expected to grow up, under the watchful instruction of the mother, a skillful, prudent, and virtuous woman. However uncertain the historical background of the heroic age may be, we know that the ideal of a hero in ancient Greece, which was held up to the rising youth to be copied, awakened more lofty aspirations, and exerted an educational influence far superior to any thing that is to be met with in the early history of the oriental monarchies. A reliance on self-activity, a longing for fame, an earnest effort to subject physical nature to the rule of the mind; and a devotion to music and gymnastics, are some of the features which foreshadowed the eminent position which Greece was to attain in the annals of education. In the historic age of the Greek republics, we notice a passionate ambition, on the part of the noblest minds, for distinction in political life, in art, and in science. A nobler view was taken, than ever before, of the functions of the state; and education was recognized as the most important subject to which state legislation could be directed. The good of the state was an object constantly held in view, and the individual and private interests of the pupils were subjects of secondary consideration. No other country ever had an educational legislation like that which is ascribed to Lycurgus (q. v.), and Solon (q. v.); and nowhere do we find such attempts to develop and test new educational ideas, as those made by Socrates, Pythagoras, Plato, Aristotle, Xenophon, Epicurus, Zeno, and a host of others. A characteristic feature of the educational system of the Greeks, from the earliest period of their history to the downfall of their country, is the attempt at a harmonious development of the powers of the mind as well as of the body. *Gymnastics* (q. v.) constituted an essential part of Greek education, and was taught and practiced in the gymnasia, or schools for bodily exercise. All that part of education which related more especially to the cultivation of the mind, was called by some, Plato and Plutarch for instance, *music*; while others separated grammar from music, and divided education into three parts: grammar, music, and gymnastics. The centers of Greek education were the two rival capitals, Athens and Sparta. Their educational systems, though both embraced gymnastics and music, differed in many and important respects. Sparta, the representative of the Doric tribes, laid greater stress on the subordination of the individual to the state and preferred physical to intellectual culture; while Athens, the representative of the more highly civilized Ionians, was the birthplace of those grand theories which, in the history of education, are set down as the chief characteristics of ancient Greece. (See ATHENS, and SPARTA.) Though we know but little of the schools and educational systems of other Grecian cities, there can be no doubt that all of them, as well as the colonies, took a greater or less part in the educational ideas which were developed and carried out in Athens and Sparta. One of the greatest, of all Greek teachers, Pythagoras, was a native of the island of Samos, and established the famous school, which has immortalized him in the history of education, in Croton, one of the Greek colonies in southern Italy. (See PYTHAGORAS.) With the subjection of Greece to the rule of Macedonia, its achievements in the work of education began to decline. Of considerable influence, in the later history of Greece as well as in that of the Roman empire, were, however, the principles of the Epicureans and the Stoics. The founder of the former was Epicurus, who died at Athens, in 270, B. C., after having taught there with great success for 35 years. He regarded a happy life, a quiet and cheerful mind, and an undisturbed enjoyment of pleasure, as the highest attainable good. Intellectual pleasures were valued by him more highly than sensual ones, and friendship, tranquillity, patience in suffering unavoidable pain, and a temperate and natural mode of life, were called by him the cardinal virtues. Epicurus and his first followers were entirely free from the licentiousness which, during the times of the Roman emperors, was considered the chief characteristic of that school. The Stoics were founded by Zeno, who died at Athens, in 260, B. C., after teaching there for 50 years with as great success as his contemporary, Epicurus. The name *Stoics* was given to his school because he used to assemble his pupils in a *στοά*, or porch. Zeno regarded virtue as the highest good, and he defined it as the firm adhesion to established principles of rectitude. Vice was, in his opinion, the only evil. He, therefore, laid greater stress than Epicurus upon the control of passions and emotions, upon the subordination of the body to the mind, upon refraining from sensual pleasures, and upon every kind of abstinence and self-denial. Even life itself should be relinquished, if it hindered the exercise of conscience. In opposition to Epicurism, Stoicism, in later times, was the symbol of an austere morality. While Greece proper, at this time, presented more and more a picture of continual decay, the educational institutions of Athens and Sparta perishing with the total loss of their independence, the city of Alexandria, in Egypt, became the seat of Greek science and literature, and its teachers and schools obtained a world-wide reputation. (See ALEXANDRIAN SCHOOL.) After the rise of Christianity, the Alexandrian school of philosophers developed the system of Neoplatonism, which endeavored to harmonize oriental theology with Greek dialectics, and to dislodge Christianity by a new universal philosophy. The fame of the Greek teachers in Alexandria also gave rise to the formation of the first school of Christian theologians, some of whom endeavored to keep alive in the church an intimate acquaintance with the greatest representatives of ancient Greek literature. These efforts, however, were not successful; but the fact that the earliest literature of the Christian church is, like the New Testament itself, written in the language of ancient Greece, has secured to the latter, at all times, an important educational influence in the Christian world. — See GROTE, *History of Greece*; HOCHHEIMER, *System der griechischen Erziehung* (1785); GOESS, *Die Erziehungswissenschaft nach den Grundsätzen der Griechen und Römer* (1808); KRAUSE, *Geschichte der Erziehung und des Unterrichts bei den Griechen, Etruskern und Römern* (1851); JACOBS, *Ueber die Erziehung der Griechen zur Sittlichkeit*, in vol. III. of his *Vermischte Schriften*, commenced in 1833; trans. by FELTON, in *Classical Studies*, by SEARS, FELTON, and EDWARDS (1843). A selection of maxims on education from the Greek classics is given in NIEMEYER, *Originalstellen griechischer und römischer Classiker über die Theorie der Erziehung und des Unterrichts* (1813); SCHMIDT, *History of Education* (New York, 1842); WILKINS, *National Education in Greece in the Fourth Century before Christ* (London, 1872).

II. *The Greek Empire.* — When, in the 4th century, A. D., Constantine transferred the capital of the Roman Empire to Byzantium, which from him received the name of Constantinople, the predominance of the Greek language and literature in the educational institutions of the empire was firmly established. About 70 years later, in 395, Theodosius, at his death, divided the empire into the Western Empire which remained under the influence of Latin or Roman culture, and the Eastern or Byzantine Empire, which, in language and civilization, was almost exclusively Greek; and which, therefore, is sometimes called the Greek Empire. It dragged out a wretched existence, until, in 1453, it was conquered by the Turks. Though thus existing through a period of more than a thousand years, and spreading over a vast extent of territory, this empire presents in the history of education little more than a blank. A general stagnation early became the chief characteristic of the intellectual condition of the empire. Nothing at all was done for the instruction of the masses; the few schools in which the Greek classics were taught proved unable to produce a single great educator. "The Greeks of Constantinople held in their lifeless hands," says Gibbon, "the riches of their fathers, without inheriting the spirit which had created and improved that sacred patrimony: they read, they praised, they compiled, but their languid souls seemed alike incapable of thought and action. In the revolution of ten centuries, not a single discovery was made to exalt the dignity or promote the happiness of mankind." The expulsion of the last Neoplatonists from Constantinople, under Justinian (527—565), had a disastrous effect; and, for some time, a few convents on the islands of the archipelago and on Mount Athos offered the only refuge to science and education. A few of the long list of emperors deserve credit for having at least attempted a general reform. The most noted among these was Bardas (850). He founded in Constantinople a free university, with a free constitution, making it independent of the church and the clergy. Distinguished teachers of philosophy, geometry, astronomy, and higher grammar were appointed, and the emperor himself attended their lectures. He established special schools for different sciences, paid the teachers from the public treasury, and intrusted the superintendence of this entire system of educational institutions to the philosopher Leo. During the reign of the Macedonian dynasty, which began in 867, Byzantine literature entered upon its most brilliant period, and Constantinople became the central seat of philological and encyclopædic erudition. Constantine Porphyrogenitus (913—959), established four special schools for philosophy, rhetoric, geometry, and astronomy, and required in every public officer of a higher grade a knowledge of philosophy and rhetoric. Among the succeeding emperors, Constantine Ducas especially encouraged education; but no important or lasting results were, at any time, obtained. The decay steadily advanced, and the empire was, from an intellectual no less than from a political point of view, a complete ruin when it fell a prey to the conquering arms of the Turks. — See SCHMIDT, *Geschichte der Pädagogik*.

III. *Modern Greece.* — The wars which the Sultans waged against the Byzantine empire being not only directed against a hostile nation, but against a hostile religion, were particularly disastrous to Greek learning. The few scholars who succeeded in saving their lives, were either forced to fly to foreign lands or to hide in cloisters. The establishment of schools of an advanced grade for the instruction of Greek youth was even more strictly forbidden than the erection of churches. In consequence of these measures, schools and all other means of culture fell into entire neglect; and the ignorance of the Greek population became, from year to year, more dense and extensive. After a long period, and particularly during the eighteenth century, the Turks, believing their authority to be beyond danger of overthrow, began to be less suspicious of their Greek subjects; and, in consequence, the condition of the latter grew more tolerable. Gradually, a more frequent intercourse with other Christian nations of Europe awakened among the Greeks a stronger desire for learning, which was easily gratified by their growing wealth. Public schools, before so rare, began to increase in number; while there also sprung up, in some of the cities, schools of a higher grade, in which was taught ancient Greek history, and, in some cases, the elements of philosophy, mathematics, rhetoric, and natural philosophy. The most efficient and best known of these schools were those situated upon the islands of Patmos and Scio, at Cydonia, Smyrna, Zagora (with a second one at Melia, on Mt. Pelion in Thessaly), two in Yanina in Epirus, one on Mount Athos, two in the Peloponnesus, one at Kumtchisnie on the Bosporus, and two in the Danubian Principalities,—at Bucharest and Jassy. These schools which were mostly supported by the endowments of patriotic citizens, and by voluntary contributions, were, in most cases, under the direction of excellent scholars, who had received their education in Italy, France, or Germany, and who devoted their time to the instruction of youth at a merely nominal salary. The condition of the elementary schools of that period was extremely miserable; and not until a few years before the insurrection, did any improvement take place. A learned Greek, Georgios Kleobulos, having become acquainted with the monitorial system of instruction, introduced it into Greece. This was the condition of public instruction at the outbreak of the revolution. During the struggles that followed, this condition gradually deteriorated. In the neighboring Ionian Islands, which were under the protectorate of Great Britain, there had been, in the meanwhile, a decided improvement in the condition of literary institutions. Several Hellenic schools and a *gymnasium* had been established by the government; and a university had been endowed by the liberality of Lord Guilford, which, although imperfect in many respects, had educated many Grecian youths, who, upon the establishment of a regular government in the new kingdom of Greece, became its leading statesmen. Count Capo d'Istria, upon being elected president, by the national convention, in 1828, erected, besides numerous public schools, a *gymnasium* on the island of Ægina, which soon became of great benefit to Greece. Under King Otho, the entire system of public education was reorganized; and the relations of the schools and of the department of education were carefully regulated.

Primary Instruction.—The common schools of Greece are regulated by the law of 1833, which makes school attendance obligatory upon all children between the ages of 5 and 12 years. This requirement is, however, far from being enforced, as is shown by the fact that, in 1870, but 33 per cent of adult males, and but 7 per cent of adult females, were able to read and write. There were 55 communes, in 1870, in which not one woman was able to read or write. In the army, the proportion of totally illiterate men was 48½ per cent, and in the navy, it was 53½ per cent. Every parish is required to have at least one school; and, in case its means do not suffice to support a school, aid is afforded by the government. There are also "irregular schools" in towns which cannot support the regular government school. In the irregular schools, the old method of individual instruction is still followed. Separate schools for girls are found in large cities only. A rule adopted by the educational department, without any authority of law, however, provides that, in every school in which the number of scholars exceeds 150 or 250, there shall be one or two assistant teachers respectively. Owing to a want of funds, this rule has not been fully carried out except in the chief towns of the *nomarchies* (provinces) and *eparchies* (districts). The schools of each parish are governed by a local board of inspectors, called the *ephory*. This board is composed of the burgomaster as president, one of the priests of the place, and from two to four private citizens. Where the inhabitants of the districts belong to different faiths, a priest from each of the denominations is chosen. The ephory have the care, oversight, and management of all the schools in the parish, and may exempt poor families from taxation for school purposes. They must visit the schools at least once a month, and report to the eparch or the nomarch the defects in the schools, as well as the improvements which they may consider necessary. They also present a report on the financial condition of the school. Committees, similar in their composition to the ephories, were provided for the eparchies and nomarchies by the law of 1833. The eparchs are required to visit the schools under their charge semi-annually, and the nomarchs the schools of the nomarchy annually; and they report to the department on the condition of the schools, and the conduct of the teachers and of the local inspectors. The principal of the school at the capital of the eparchy has the supervision of all the schools in that district, as respects the professional skill and capacity of the teachers; and the principal of the school at the capital of a nomarchy has a similar supervision of all the schools in his province. It is the duty of these principals to visit the schools under their charge every six months, and report on them to the director of the teachers' seminary at Athens, who is the chief superintendent of all the schools. The schools are divided into two grades: the lower or *monitorial*, including eight classes, in each of which the scholars spend from one to two years; and the higher, *syndidactic* or *simultaneous*, composed of two (in the cities three) annual classes. All the scholars are instructed in reading, writing, arithmetic, the rudiments of modern Greek grammar, and religion. To these studies are added, in the higher schools, the elements of geography, Biblical and Greek history, and the grammar of the ancient Greek language. Religious instruction is generally imparted by the teacher; but, in a few cases, where the scholars are of different religion, the parents of that denomination which is in a minority, provide separate religious instruction at their own expense. The scholars are also required to furnish short compositions. Music and drawing are taught in but very few schools, owing to the scarcity of teachers. The teachers are required to keep a general register of the scholars, a record of school delinquencies, a record of the visits of inspectors and other persons, a register of children who, through want of room, have been refused admission, a roll of honor, a record of reprimands and punishments, a book for each scholar, in which his conduct is noted twice a month by the teacher and the parents, registers of the different classes, and a monthly exhibit of the condition of the school, not only with respect to the scholars and their studies, but also in regard to the school-building etc. A quarterly report is sent to the eparch or nomarch, drawn up from these monthly exhibits, and signed by the teacher and the local inspector. Two general examinations are held annually,— at the end of February, and at the end of August, of which the latter only is open to the public. The final examinations of the highest classes take place at the end of the year, and are conducted by a special examining committee. The school laws are read to the scholars and are affixed to the walls of the school rooms, where they remain during the year. Corporal punishment is strictly forbidden; the usual punishments being the loss of credit marks, detention, reprimands, and expulsion. Pupils are rewarded by certificates of merit, admission to the roll of honor, and premiums at the closing examination of the year. A teachers' seminary has existed in Athens since the first year of the kingdom, to which a model school is attached. Upon passing an examination teachers receive diplomas of the first, second, or third grade, according to their degree of proficiency. This seminary also furnishes the Christian population of the Turkish provinces with teachers. Female teachers are educated in the higher female schools, particularly in the one founded by the Association of the Friends of Education, in Athens. The minimum monthly salary is 100 *drachmas* (1 drachma=$0.19.3) for teachers in the capital of a nomarchy, 90 drachmas for teachers in the chief towns of eparchies, 80 drachmas for second-class teachers, and 50 drachmas for third-class teachers. The salaries of teachers at the capitals of the nomarchies and eparchies are increased 10 drachmas a month, but cannot exceed 140 drachmas. Besides the salary, the teachers of all classes are provided with free lodging, and receive from the parish treasury a monthly apportionment of 22 *lepta* (100 lepta equal to 1 drachma) for each pupil. As, with the exception of the islands of Syra, Tino, Naxia, and Santorini, the inhabitants of which are Roman Catholics, almost the entire population of the kingdom belong to the Greek Church, no provision has been made for denominational schools; and hence the members of both churches, in these islands, send their children to the same school. In some places, schools have been established by the Catholic clergy for the children belonging to that church: but these are supported entirely by private means. The influence of the clergy in the government schools is very limited, not extending beyond the supervision of the religious instruction and the approval of the religious books to be used. The increase in the number of schools, as well as in the school attendance, during the present century, has been very marked. While, in 1830, there were only 71 schools, with 6721 scholars, and, in 1858, 754 schools, with 51,596 pupils, there were, in 1872, 991 primary schools for boys, and 186 schools for girls, with 1713 male and 560 female teachers, and 73,580 pupils, of whom 61,885 were boys, and 11,695, girls. In 1874, there where 1227 schools, with 81,449 pupils.

Secondary Instruction. — Secondary instruction is imparted in the Hellenic schools and the gymnasia. The Hellenic schools correspond to what in Germany are called *Latin schools*, and also to the higher burgher schools, as they are intended not only to prepare boys for the gymnasia, but also to provide a higher education for those who intend to follow a business or trade. The gymnasia correspond to the higher classes of the German gymnasia, and prepare those for the university who look forward to a learned profession. Each one of the eparchies is required to have, at least, one Hellenic school; and each one of the nomarchies, a gymnasium. The secondary schools are governed by the royal ordinance of 1837. In order to receive support from the state, they must have no denominational character. The Hellenic schools of each province are under the supervision of the principal of the nearest gymnasium, who visits them and reports on their condition annually. The Hellenic schools comprise three, and the gymnasia, four annual classes. The course of study in the Hellenic schools is as follows: religion and penmanship (2 hours each per week in all three classes), history and mathematics (3 hours each), French language (4 hours), the Greek language (12 hours), geography (3 hours in the first class, and 2 in each of the others), and Latin (3 hours, in the third class only). In the gymnasia, the course of study is as follows: religion and natural philosophy (2 hours each in all four classes), mathematics, history, and French (each 3 hours), Latin (5 hours), Greek (9 hours), geography (3 hours in the first two classes, and 2 in the two highest classes); the elements of philosophy are taught 2 hours per week. Religious instruction is given in the Hellenic schools by one of the teachers, and in the gymnasia by regularly appointed priests. In the Hellenic schools, chrestomathies are used; and the classic authors in Greek and Latin are generally read in the gymnasia. Text-books have been prepared for all the various branches of study, and have steadily improved. The system of class teachers prevails in the Hellenic schools; but, in the gymnasia, all the branches, with the exception of Greek, geography, and history, are taught by special professors. The law also provides for a library for the use of the teachers and students in each Hellenic school and gymnasium; but very little has, as yet, been accomplished in this direction. The final examination is conducted by the professors of the gymnasium, in the presence of the ephory, and is both oral and written. The instructors are styled professors, tutors, and assistants. The title of professor is given to those only who teach the above-mentioned branches in the gymnasia; all others who hold permanent positions as instructors in the gymnasia and Hellenic schools, are styled tutors; but those who are not permanently engaged are called assistants. The royal ordinance of 1850 makes it obligatory on a candidate for a position as teacher in a Hellenic school to have attended, besides a full course in the gymnasium, at least two years the philosophical and philological course in the university, and to have taken part in the exercises of the philological seminary. In the Hellenic schools, the teachers are divided into three classes in regard to salaries, receiving respectively 100, 130, and 150 drachmas per month; while the principals receive 200 drachmas. In the gymnasia, the principal receives 300 drachmas, and the professors 250. These salaries may be increased one-fifth after five years' service. Hellenic schools and gymnasia may also be established by private persons, upon receiving permission from the government. Higher schools for girls have been established in the larger cities; but they are, with one exception, private institutions The course of study in the private institutions is of three years, and does not differ from that pursued in the Hellenic schools, except that French and English are taught instead of Latin. Instruction is given by both male and female teachers; but there must be, in all cases, a female principal. These schools are subject to governmental supervision, under a special ephory. The exception mentioned above is the Central School of the Society of the Friends of Education, at Athens. This school, which is specially intended to train female teachers, has four classes. The fourth class is obligatory for those only who wish to become teachers in the higher schools. In 1870, there were 15 gymnasia, and 144 Hellenic schools, with 7780 pupils; and 23 private institutions, with 1589 pupils of both sexes. The number of gymnasia, in 1872, was 17. According to the latest accounts, the number of higher schools for girls was 10, with about 900 pupils; and the Central School has over 100 pupils.

Superior Instruction.—The Otho University, in Athens, was founded in 1837, and is organized on the plan of the German universities. It has made rapid progress during the short period of its existence. From 35 students that entered at the time of its foundation, it has risen to 1,205 students, in 1869. The total number of students that attended from 1837 to 1869 was 5,245. The number of professors, in 1874, was 43; that of students, 1,352. It is composed of four faculties.—theology, law and political economy, medicine and pharmacy, and philosophy. Each faculty elects its own rector and a representative; and these, with the president appointed by the king, constitute the academic council. The professors elect a representative to the national legislature. A philological and pedagogical seminary for the training of professors and teachers for the gymnasia and special schools, is connected with the university. There are also connected with the university a library, a botanical garden, a museum of natural history, an observatory, a collection of coins and antiquities, and a hospital for practice and demonstration in medicine and pharmacy. Instruction is free, the salaries of the professors being paid by the government. The endowments, of which there are quite a large number, are used for incidental expenses. The university of Corfu was abolished in 1865.

Special Instruction. — The following special schools were in operation in 1872: five commercial schools, four theological schools, four nautical schools, one polytechnic school, and one school of agriculture. Of the theological schools, three were of a lower, and one of a higher grade. The course of study in the lower schools, which are intended to educate village priests, is essentially the same as that pursued in the Hellenic schools, the principal difference being, that the writings of the church fathers are used in connection with the pagan classics, These three schools had about 80 students. The higher seminary, known as the Rhizarian School, was established, about 1845, by endowments from two brothers, named Rhizaris. It has five annual classes, in which the students receive a thorough theological training; and, upon graduating, they are eligible to all the church offices. It has about 40 students. Orphan asylums were not established until quite recently. There are two in Athens, — one founded by Queen Amelia, for girls; and another, by two liberal Greeks, for boys. A third one, in Syra, is supported by the parish. These three asylums had, in 1869, 158 pupils. — See SCHMID, *Encyclopädie*, vol. III; BARNARD, *National Education* in Europe, vol. II.

GREEK CHURCH (also called **Greek Catholic, Orthodox Greek,** and **Eastern Church,**) is the name generally used in English to designate that part of the Christian Church which recognizes only the first seven of the so-called œcumenical councils, and, in addition to them, the so-called *Quini-sextum* of Constantinople, held in 692, and the council of Constantinople, held under Photius in 879 and 880. The chief dogmatic difference between the Greek Church and the Roman Catholic Church relates to the doctrine concerning the procession of the

Holy Ghost, the former charging the latter with altering the faith of the undivided church on this subject, as it had been defined by one of the œcumenical councils. This church is the state church in Russia, Greece, Montenegro, Servia, and Roumania; and it predominates in European Turkey, and in the Servian and Roumanian districts of Hungary. The population connected with the church numbers about 70 millions. The church organizations in the countries named are all, in point of government, independent of each other; though honorary primacy is conceded to the see of Constantinople. The virtual separation of the Greek Church from the churches of western Europe began in the 9th century, under Patriarch Photius, and was fully consummated in the 11th. As the state church of the Eastern or Greek Empire, this church had a controlling influence upon the educational affairs of south-eastern Europe (see Greece); and since, through its instrumentality, the larger portion of the Slavic race were converted to Christianity, it has been no less influential in the educational history of Russia and other Slavic countries. The lethargy into which the Greek Church appears to have sunk, is reflected in the slowness of educational progress in all the countries of the Greek faith. This lethargy is now on the wane. An active intercourse has, for some time, existed between Greek and Anglican theologians, and at union conferences held at Bonn, in 1874 and 1875, between prominent representatives of the Greek, Anglican, and Old-Catholic communions, the unity of these three churches in all essential doctrines was declared. The strenuous efforts which, for some time, have been made, in all the countries of the Greek faith, to bring their educational systems to the highest state of perfection, will be greatly strengthened by these church movements. Already, the church has theological faculties, modeled after those in Germany, connected with all the universities of Russia (except Dorpat), Greece, Servia, and Roumania, as well as with the Austrian university of Czernowitz. The condition of the ecclesiastical seminaries has likewise greatly improved. Many of the theological professors have received their education at the German universities; and their efforts to raise the educational standard of the young clergy have met with considerable success. As the institutions for secondary and primary instruction, in all the countries professing the Greek religion, have a denominational character, religious instruction being either given or superintended by the clergy, the improvement of theological education exerts an influence upon the schools of every grade, and greatly aids the progress of education in general.

GREEK LANGUAGE, one of the two classical languages, which, as such, constitute an important part of the course of study in all the higher literary institutions of the civilized world. As the original language of the New Testament, and of the early fathers of the Christian church, it has a special importance for Christian theologians, and for all who desire to study the Scriptures in the original tongue. In the middle ages, the Greek language was but rarely studied; although Bede, Alcuin, Erigena, Abélard, and many other scholars are said to have understood it. Toward the close of the 14th century, several Greek scholars, who came as fugitives to Italy, awakened in the learned institutions an interest in their language. Florence and Rome were the first centers of the new study; but, in Italy, the study of the Latin classics gradually superseded, to some extent, that of the Greek language, which found its most enthusiastic admirers and students in Germany and the Netherlands. Erasmus, Reuchlin, and Melanchthon were the greatest Greek scholars in western Europe; and they also introduced the study of the Greek classics, though to a limited extent, into many of the institutions of learning. The appeal of the reformed churches from the Latin Vulgate to the Greek original of the New Testament greatly increased the demand for a knowledge of the Greek. In the 17th century, there was a general decline of the study throughout Europe; but, in the 18th century, it was resumed with new vigor; and it was especially the Dutch school of Hemsterhuis and Valckenaer that promoted the philosophical study of the language. At the beginning of the 19th century, Gottfried Hermann greatly improved the method of teaching Greek; and, more recently, the study of Greek, like that of Latin and all the modern languages, has been greatly benefited by the result of comparative philology. Greek is one of the most important branches of the Indo-European languages. Its relation to the other branches of this family has not yet been definitely determined; and opinions still differ as to whether Greek and Latin (particularly the latter) are entirely independent branches, or whether they spring from a single branch, now lost, which was co-ordinate with the Sanskrit, the German, the Slavic, and other branches. Greek was probably spoken as long ago as fifteen centuries before the Christian era, and appears, in the most ancient traces which are left of it, split into a number of dialects, the two principal of which were the Doric and the Ionic. The largest and most important portion of Greek literature was written in the Ionic dialect, in the history of which different periods may be distinguished: the old Ionic or epic dialect, which appears in the poems of Homer, and remained the dialect of epic poetry; the new Ionic, in which the history of Herodotus is written; and the Attic, which is the language of the larger portion of Grecian literature. Greek was spoken, in the earliest times to which we can trace it, in Greece as well as in parts of Asia Minor; subsequently, the establishment of Greek colonies carried it as a living language to Sicily, southern Italy, and southern Gaul. Through the conquests of Philip and Alexander of Macedon, the languages of Greece and Macedon gradually mingled; and new dialects were produced, the most important of which was that spoken at Alexandria, and used in the Greek translation of the Old Testament, in the New Testament, and in the early literature of the Christian Church. During the first three centuries of the Christian era, Greek held a position similar to that subsequently occupied for a long time in Europe by the French language, being the favorite language of literature and of the educated classes. It continued to exist as a spoken language in southern France during several centuries after the introduction of Christianity; and in Sicily and southern Italy, until the 11th century. Through the influence of the Romans, and subsequently of other nations that conquered south-eastern Europe, the Greek language, as spoken by the people, was considerably modified; and gradually the modern Greek, or Romaic, arose, at present the language of the entire population of the kingdom of Greece, and of the numerous Greek population of Turkey.

The Greek alphabet was derived from the Phœnicians, though the time when, and the manner in which, it was introduced, are still subjects of learned controversies. Accentuation, as well as the signs of aspiration, are supposed by many to have been invented by Aristophanes of Byzantium, and to have been introduced about 200 B. C., for the purpose of teaching the language to foreigners. The pronunciation of ancient Greek is still a matter of discussion. The Greek scholars who revived the study of the language in western Europe, pronounced it like the modern Greek of their time; and this system is called *iotacism*, or *Reuchlinism*, after Reuchlin, who was its chief advocate in western Europe. In opposition to it, Erasmus maintained that each vowel and diphthong had its own proper sound, *α* like the Italian *a*, *ι* like the Italian *i*, *υ* like the French *u*, *ε* and *η* like the Italian long and short *e*, respectively, and that *β*, *γ*, *δ*, *ζ*, *τ*, *π*, and *χ* had respectively the sounds of the German *b*, *g*, *d*, *z*, *t*, *p*, and *ch*. This system was called *etacism*. The controversy between the two systems is not yet ended, but distinguished scholars, like Gladstone, Eichthal, Groves, and Felton, recommend the introduction of the modern Greek pronunciation into the English, French, and American schools. The development of the Greek language has been of an exclusively national character, no influence having been exerted upon it by any foreign language. The few words which it received from any foreign language (Persian), it thoroughly assimilated with its own. It is rich in radical words, and in compounds and derivatives. It also possesses an abundance of grammatical forms; though, in this respect, it is inferior to some of the older branches of the Indo-European family, as the Sanskrit and the Zend. But it is not exceeded by any language in the number of its particles, and in the ability to express, by means of them, the most varied relations and modifications of ideas. It is also distinguished for its euphony: and neither the Latin nor any modern language can compare with it in regard to rhythmical beauty. "More than any of its sister languages," says Curtius, "the Greek language must be regarded as a work of art, on account of its sense for symmetry and perfection of sounds, for clearness of form, for law and organism. Its syntax has never been equaled by that of any language in the world."—Ever since the introduction of the study of Greek into classical schools, it has been a general rule to begin it later than Latin. Robert and Henry Stephens strongly advised the opposite course; and many of the most distinguished scholars, as Hemsterhuis, Ruhnken, Gedike, Herbart, and Passow, expressed a concurrence in these views. The vast majority of educators have, however, been so decidedly in favor of Latin as the first classical language to be studied, that only in exceptional cases has a practical attempt to begin with Greek been made. As a general rule, less time also is devoted to Greek than to Latin; though some distinguished educators, like Raumer (in his *Geschichte der Pädagogik*), who do not dispute the claim of Latin to be taken up first, demand an equal or a superior position for Greek in the higher classes of classical schools. In the animated conflict concerning the claim of the classical studies to a place in all educational institutions of a higher grade, Greek has had to bear the brunt of the battle. On many sides concessions have been made to Latin, because of its closer affinity with modern languages, and particularly on account of its importance for an etymological knowledge of these languages; and a readiness has been expressed to provide instruction for it even where Greek has been entirely excluded. Thus we find that, in the United States, in consequence of the progress of optional studies in our colleges and universities, and with the advancing establishment of scientific and other courses differing from the classical, the study of Greek has been dropped in a great many cases, while the Latin has been retained. In Germany, where the opponents of the predominance of classical studies have concentrated their strength in organizing real schools in opposition to the classic gymnasia, the existence of a large number of "real schools with Latin" is sufficient to indicate the different estimate in which the two classical languages are held by the opponents of their present ascendency.

In regard to the method to be pursued in teaching Greek, there is a greater agreement among leading educators, than in respect to many other studies. It is generally admitted that the comparative difficulty of Greek grammar, even of its first or etymological part, makes it desirable that all whose education is to comprehend a knowledge of this language, should begin the study at an early age, when the vigor of memory is still fresh, and its function still prevails in the course of instruction. Hamilton's and Jacotot's methods find now-a-days few followers in the teaching of Greek; and the study of grammar, with translation from Greek into English and English into Greek, chiefly occupies the attention of the beginner. It has been proposed, and sometimes attempted, to begin the teaching of the language, in accordance with the development of Greek literature, with the study of the epic and old Ionic dialects; but the old practice to make the Attic dialect the basis has victoriously maintained its traditional ascendency. Exercises in translating from the native language into Greek should not be omitted, as is frequently done; though it is well understood that, on account of the greater difficulties presented by the Greek, and the shorter time allowed for the study of it, the same proficiency in writing Greek is hardly ever or anywhere attained as in Latin. The first exercises in translating Greek into English, or any other native tongue, are now generally provided in the grammars. Where grammars are used which exclude exercises in translation, the use of a Greek reader is at once begun. In general, the use of a reader before the taking up of a particular author, is continued longer in Greek than in Latin, because of the longer time required to obtain a good knowledge of the grammatical rules in the former. When the pupil is far enough advanced to take up the reading of Greek authors, the teacher, in making the selection, should not only be careful to proceed from the easier to the more difficult writers, and to prefer the classic authors, but also to read enough of the selected work to give to the students an adequate idea of the spirit of Greek literature. The orations, philosophical dialogues, and dramas are particularly suited for advanced classes in Greek. Of course, instruction in Greek is not considered complete without the reading of, at least, one of the Homeric poems; and it is fortunate that the easy flow of the language of these poems fits them for an early stage of classic reading. Among the Greek historians, Xenophon and Herodotus fully deserve the favor of teachers and students, which they have enjoyed for centuries. In regard to Herodotus it is, however, desirable to wait until the pupils are well grounded in the Attic dialect. To include Thucydides in a regular course appears to many classical scholars objectionable, as the language is too difficult for the majority of college students, and as the gloomy period which he describes is not calculated to increase the students' interest in ancient Greece. Of the dramatic poets, Æschylus and Aristophanes are not suited for schools; and, therefore, only Sophocles and Euripides can be recommended.

The beginning of a grammatical treatment of the language can be traced back to the Sophists, Plato, and Aristotle. Considerable progress is visible in the works of the Stoics, who created most of the technical terms used in Greek grammar. The idea of a systematic grammar was developed by the Alexandrian school of grammarians, some of whom wrote upon the subject of grammar in the most limited sense; others, upon different specific topics included in it, as syntax, meter, dialects, and the like. As the author of the first systematic grammar, Dionysius the Thracian is mentioned, whose work remained a standard for a long time. The first lexicographic attempts were likewise made at Alexandria. The central seat of Greek philology was, at a later period, transferred from Alexandria to Constantinople, where a number of scholars distinguished themselves as authors of dictionaries of Greek literature, while their grammatical labors consisted chiefly of commentaries upon the work of Dionysius. The first grammar in western Europe, in which Greek type was used, was that by Constantine Lascaris; it was published in Milan in 1476, and remained for centuries the basis of all other grammatical works. A new epoch in the history of Greek grammars dates from Hermann's classical work *De emendanda ratione Graecæ grammaticæ* (Leipsic 1801). Since that time, a number of excellent grammars, fully superseding previous works, have appeared. Nearly all of them are by German authors; but, by means of translations, they have been extensively introduced into English, American, and other schools. Among the most noted of these grammars, are those by Buttmann, *Schulgrammatik* (1st ed., 1824, 17th ed., 1874), translated by Edward Everett (Boston, 1822); *Ausführliche Griech. Sprachlehre* (2 vols., 1819—27, 2d ed., with valuable additions from Lobeck, 2 volumes, 1830—39), trans. by Edward Robinson (Andover, 1833); Matthiæ (1807), trans. by Ed. V. Bloomfield (London, 1832); Rost (1816, 7th ed., 1854), Engl. translation (Lond., 1827); Kühner, *Schulgrammatik*, trans. by B. B. Edwards and S. H. Taylor (Andover, 1843); and *Ausführliche Grammatik der Griechischen Sprache* (2 vols., 1834, revised ed., 1869-1871); Westphal (2 vols., 1870—72); Curtius, *Schulgrammatik* (1852, 11th ed., 1875); English trans. by Smith. The grammar of Curtius, which numerous translations have extensively introduced into the learned institutions of the countries of Europe and America, has, to a larger extent than any of its predecessors, made use of the results of comparative philology, and adopted a number of the technical terms which have first been brought into use by Grimm's German grammar. In England and the United States, Greek grammars have been published, among others, by Anthon, Boise, Brooks, Bullions, Crosby, Fisk, Goodrich, Greenwood, Hadley, Jelf, Jones, Kendrick, M'Clintock, Mayor, Moore, Morris, Popkin, Silber, Smith, Sophocles, Taylor, Valpy, Waddell, Wettenhall, Wordsworth, and Wright. Some of these works are only primers for beginners. Among the latest and best of the complete grammars, is that by Hadley (*Greek grammar*, 1860; chiefly based on the German work of Curtius).

The basis of all Greek lexicons in modern times is Henry Stephens's *Thesaurus Linguæ Graecæ* (1572; a new edition, embodying all the Greek learning of the age, was brought out by Hase, L. and W. Dindorf, 8 vols., Paris, 1831-63). The first real improvement over Stephens was made by Passow, whose work (*Handwörterbuch der Griechischen Sprache*, 2 vols., 1819—24) appeared, at first, as a revised edition of Schneider's' Greek Dictionary; but, in the 4th edit. (2 vols., 1831), as his own work. The plan of Passow was, in each successive edition, to make the lexicon complete for the interpretation of some additional authors, until it should become a full *thesaurus* of the Greek language. After the death of Passow, a new edition, carrying out the plan of the author, was prepared by the joint labors of Rost, Palm, Kreussler, Keil, Peter, and Benseler (2 vols., 1841—57). The work of Passow was the basis of the Greek-English lexicon of Liddell and Scott (Oxford, 1845; New York, edited by Henry Drisler, 1848; large 4to ed., London, 1870.). Other large Greek dictionaries have been edited by Jacobitz and Seiler (2 vols., 1839—46), and Pape (3 vols., 1850-63; the 3d vol., containing proper names, by Benseler). School dictionaries have been prepared by Rost, Benseler, Schenkl, Liddell and Scott, and others. Among English and American authors, who have brought out Greek dictionaries, besides those already mentioned, are Jones, Pickering, Oliver, Groves, Donnegan, and Dunbar. (See DICTIONARY.) There is also a very rich literature of special lexicons for those Greek authors who are commonly read in schools. A comparative grammar of Greek and Latin was written by Leo Meyer (2 vols., Berlin, 1861—5), and an etymological root-dictionary on the basis of comparative philology by Benfey (*Griechisches Wurzellexicon*, 2 vols., 1839—42).

Among the Greek readers which afford selections from all, or nearly all, the authors who are suited for school reading, none have been so extensively used as those of Jacobs and Dalzel. The work of Jacobs (*Elementarbuch der Griechischen Sprache*, begun in 1824) consists of four parts, the first of which is designed for beginners, the second gives extracts from historians or orators relating to the history of Athens, the third is composed of philosophical, and the fourth of poetical, extracts. Several American translations of parts of this work have been published (one by Prof. Anthon), and have been used by many American schools. Dalzel's two readers (*Collectanea Graeca Minora*, and *Collectanea Graeca Majora*) first appeared in Edinburgh (1789), where the author was professor of Greek in the university. New editions were brought out in England by Dunbar and C. J. Bloomfield, and in the United States by Popkin and Wheeler. Other Greek readers have been published by Abbott, Arnold, Boise, Colton, Felton, Goodwin, Merry, and Wyttenbach. Of late, the use of readers has, to some extent, given place to the works of particular authors, of which many annotated editions have appeared. Thus there are editions of works of Æschines, by Champlin and Simcox; of Æschylus, by Drake, Edwards, Felton, Sachtleben, Weale, and Woolsey; of Aristotle, by Poste; of Aristophanes, by Felton, Greene, and Weale; of Demosthenes, by Champlin, D'Ooge, Drake, Heslop, Holmes, Kendrick, Simcox, Smead, and Tyler; of Euripides, by Allen, Weale, and Woolsey; of Homer, by Anthon, Boise, Felton, Mayor, Merry, Owen, Searing, and Smith; of Herodotus, by Johnson, Mather, and Weale; of Isocrates, by Felton; of Lucian, by Weale; of Lysias, by Huntingdon, Stephens, and Whiton; of Pindar, by Myers; of Plato, by Tyler, Wagner, Weale, White, and Woolsey; of Plutarch, by Hackett and Tyler; of Sophocles, by Campbell, Crosby, Jebb, Jones, Smead, White, Weale, and Woolsey; of Theocritus, by Snow; of Theophrastus, by Jebb; of Thucydides, by Bigg, Frost, Owen, and Weale; of Xenophon, by Anthon, Boise, Crosby, Kendrick, Owen, Philpotts, Robbins, and Weale. Histories of Greek literature have been written by Bernhardy, K. O. Müller (2 vols., with continuation by Donaldson), Mure (*A critical history of the language and literature of ancient Greece*, 5 vols.), Munk, (2 vols., 1849—50), Nicolai (2 vols., 1866—7), Burnouf (*Histoire de la littérature grecque*, 2 vols., 1869), Bergk (vol. I., 1872). The standard grammatical work on the Greek language of the New Testament is Winer (*Grammatik des neutestamentlichen Sprachidioms*, Engl. trans. by Stuart and Robinson); and other grammars have been written by Greene and Stuart. Lexicons to the Greek New Testament have been published by Wahl (1822), translated by Robinson; Bretschneider (1824); Wilke (1841); and a second work by the same author (1858); Schirlitz (1851); Robinson (*Greek and English Lexicon of the New Testament*, 1836); Grimm (1868).—For an account of the Greek Church writers, see CLASSICS, CHRISTIAN.

GREENEVILLE AND TUSCULUM COLLEGE, at Home, Greene Co., Tenn., near Greeneville, was organized in 1868, by the union of Greeneville College and Tusculum College, founded in 1794 and 1847, respectively. It is under Presbyterian control. It has a primary, a preparatory, and a collegiate department, with a classical and a scientific course. The libraries contain 7,000 volumes. In 1874—5, there were 9 instructors and 112 students (senior class, 2; regular course, 45; scientific course, 24; primary department, 41). Both sexes are admitted. The cost of tuition in the preparatory department is $20 per year; in the collegiate department, $30. The Rev. W. S. Doak, A. M., is (1876) the president.

GRIMM, Jakob Ludwig, the greatest of all German philologists, was born at Hanau, Jan. 4., 1785, and died in Berlin, Sept. 20., 1863. He was appointed, in 1816, second librarian at Cassel, and in 1830 professor and librarian at the university of Göttingen. He was deposed, in 1837, for having signed, with six other professors, a protest against the abolition of the state constitution by the king. In 1841, the Prussian government called him to Berlin as professor and member of the Academy, which position he retained until his death. In 1846 and 1847, he presided over the meetings of the German philologists, who universally recognized him as their chief. His work on German grammar (*Deutsche Grammatik*, 3 vols., 1819—37) established a new branch of literature, that of historical grammar; and while it has called forth a number of similar works in other languages, it is still unsurpassed. The German dictionary, which he began, in 1852, jointly with his brother Wilhelm, occupies an equally high rank in the history of dictionaries (*Deutsches Wörterbuch*, 1st vol., 1852; 4th vol., 1874). This work was designed by him to contain every German word from the time of Luther to Goethe; and the volumes which he published exceeded, in comprehensiveness of plan, every other modern dictionary. The continuation of the work has been intrusted to M. Heyne, R. Hildebrand, and K. Weigand; but it is not expected that it will be completed until 1890. The historical treatment of the vernacular tongue, which Grimm's German grammar and dictionary have introduced into the literature of modern languages, has also greatly improved the method of teaching modern languages, both foreign and vernacular. The more extensive and accurate knowledge of the growth and structure of languages, which is now generally possessed by intelligent teachers, is reflected in the instruction of millions of children; and the vast superiority of recent school grammars, reading books, etc. is, to a considerable extent, due to the influence which has been exerted by the works of Grimm.

GRIMM, Wilhelm Karl, a brother of Jakob Grimm, and like him, a prominent German philologist, was born at Hanau, Feb. 24., 1786, and died at Berlin, Dec. 16., 1859. In his life and literary labors, he was very intimately associated with his brother. Like him, he was librarian at Cassel (1814—30), librarian (1830) and professor (1835) at Göttingen; and, finally, after having lost his offices in Göttingen for joining the protest against the abolition of the state constitution, he accompanied his brother, in 1841, to Berlin. Besides writing a large number of works on the earlier literature of Germany, he was the co-editor, with his brother, of the German dictionary.

GRISCOM, John, an American educator, born at Hancock's Bridge, N. J., Sept. 27., 1774; died at Burlington, N. J., Feb. 26., 1852. He was of Quaker extraction, and, for a time, studied at the Friends' Academy in Philadelphia. Afterwards, he took charge of the Friends' Monthly Meeting School, at Burlington. He removed to New York in 1807, where he taught for twenty-five years, during which time he assisted in founding the Society for the Prevention of Pauperism, and established a private seminary, called the New York High School. In 1823, he published *A Year in Europe* (2 vols.), the result of his travels and visits to the principal institutions of learning and charity, prisons, factories, etc., on the European continent. From 1831 to 1835, he was principal of a boarding-school in Providence, R. I., after which he removed to Burlington. One of his last acts was the reorganization of the common-school system of New Jersey. His son, John H. Griscom, published his biography (New York, 1859).

GRISCOM, John Haskins, a physician, son of the preceding, born in New York, Aug. 13., 1809; died there April 28., 1874. In 1833, he was appointed assistant physician to the New York dispensary, and, in 1834, chief physician. He was also professor of chemistry in the New York College of Pharmacy, from 1836 to 1840. In 1843, he was appointed physician to the New York Hospital, where he remained till 1867. His principal works relate to physiology, hygiene, and ventilation; but some of them have an important bearing on education, and others have been extensively used for school instruction. They include: *Animal Mechanism and Physiology* (1839); *Sanitary Condition of the Laboring Classes of New York* (1844); *Uses and Abuses of Air, and the Means for the Ventilation of Buildings* (1850); *Hospital Hygiene* (1853); *First Lessons in Physiology, with Brief Rules of Health, for the Use of Schools* (1860); *Sanitary Legislation, past, present, and future* (1861). Dr. Griscom also rendered an important service to education by his lectures on physiology.

GROOT, Gerard. See Hieronymians.

GROUNDS, School. See School Grounds.

GUATEMALA. See Central America.

GUIZOT, François Pierre Guillaume, a French statesman, who, as prime minister and minister of public instruction, exerted a considerable influence upon the progress of education in France, was born Oct. 4., 1787, and died Sept. 13., 1874. He was of Huguenot descent; and after the death of his father, an eminent lawyer of Paris, who perished by the guillotine during the Reign of Terror, he was educated by his mother at Geneva, where his whole nature became permeated with the spirit and influence of John Calvin, whom he accepted as his master and model until his dying day. Having returned to Paris, at the age of eighteen, he was, for a time, tutor in a distinguished family; but he soon became connected with the periodical press and the literary circles of Paris, and, in 1812, received the appointment of professor of modern history in the Sorbonne. His political career began immediately after the fall of Napoleon I.; and, from that time until the overthrow of royalty, in 1848, his influence in the government of France was quite marked. He drew up, in 1830, the protest of the deputies, which led to the dethronement of Charles X.; and, after the success of the revolution, was appointed provisional minister of public instruction. He exchanged this position, after a few days, with that of minister of the interior, but resumed it in 1832, when he entered the new cabinet under the presidency of Soult. He prepared an excellent code of laws for promoting primary education, and attended personally to their enforcement. In the cabinet of 1836, under the president Molé, he resumed the same post; but, becoming dissatisfied with the plans of his colleagues, he abandoned it in 1837. From 1840 to 1847, he was minister of foreign affairs, and from 1847 to 1848, president of the French ministry. After the revolution of 1848, he retired from public life, and devoted himself wholly to literary labors. He was a member of the Academy of Moral and Political Sciences, of the Academy of Inscriptions and Belles-Lettres, and of the French Academy. Though a zealous Protestant, he knew how to gain the esteem of the Roman Catholics, even as minister of public instruction. His indefatigable zeal and his great merits in behalf of the promotion and organization of primary instruction in France, were generally recognized. Guizot was one of the most prolific writers of France during the present century. Most of his works have been translated into English; and the more important of them, into nearly all the languages of Europe. Some of them, especially the *History of Civilization in Europe*, have been extensively introduced as text-books into very many institutions of learning.

GUTSMUTHS, Johann Christoph Friedrich, celebrated for his efforts in behalf of physical education, and particularly as one of the founders of the German system of gymnastic training (*Turnunterricht*), was born in Quedlinburg, a town of Prussian Saxony, in 1759, and died at Ibenhain, near Schnepfenthal, in 1839. He studied theology at Halle for three years, after which he was employed to superintend the gymnastic exercises at Salzmann's Institute, at Schnepfenthal (1786). Here he devoted himself to the study and elaboration of gymnastics as a branch of education, and was the means of introducing it into many other institutions of Germany. He also wrote several works on gymnastics, among which his *Gymnastik für die Jugend* (1793) became a classic work, and the basis of most other German treatises on the subject. Among others are *Erholung des Körpers und Geistes für die Jugend* (1796), and *Kleines Lehrbuch der Schwimmkunst* (1798). His services in behalf of geographical instruction were also of great value. He was not only an able teacher of geography, but a distinguished writer on the subject. The celebrated Karl Ritter was one of his pupils in the institute at Schnepfenthal. The centennial celebration of the birthday of Gutsmuths was held at Schnepfenthal, in 1859, with great festivity and pomp.—See DITTES, *Schule der Pädagogik* (Leipsic, 1876). (See also GYMNASTICS.)

GUYOT, Arnold Henry, a distinguished scientist, particularly in the department of physical geography, and the author of a series of school text-books on geography, widely used in the United States, was born near Neufchatel, in Switzerland, Sept. 28., 1807. He studied at various institutions, at Carlsruhe making the acquaintance of Agassiz, with whom he began the study of natural science. Subsequently, he passed through a course of study in theology at Neufchatel and Berlin; but afterwards gave his attention exclusively to natural science. In 1835, he went to Paris, where he resided till 1839, making summer scientific excursions through France, Italy, Belgium, and Holland. From 1839 to 1848, he was professor of history and physical geography in the academy of Neufchatel; and during this period made some important researches and discoveries in regard to the movement of glaciers and the transportation of bowlders, the details of which it was proposed to publish as the second volume of the *Système glaciaire*, by Agassiz, Guyot, and Desor, the first volume of which was printed in Paris in 1848. He emigrated to the United States in 1848, and took up his residence at Cambridge, Mass. In the winter of 1848—9, he delivered, in Boston, a course of lectures on the science of physical geography, which were afterwards translated by Prof. Felton, and collected into a volume, which was published under the title of *Earth and Man*. This work introduced important improvements in the methods of studying and teaching geography in the schools of the United States, as well as in the construction of school text-books on that subject. Prof. Guyot was employed, for some time, by the Massachusetts board of education to deliver lectures in the normal schools of the state and before the teachers' institutes. In 1855, he accepted the appointment of professor of physical geography in the College of New Jersey, at Princeton, which position he still continues to occupy. His school series of geographies, the first volume of which was published in 1866 (*The Earth and its Inhabitants; Common-School Geography*), has attained a high degree of popularity. Its distinguishing feature is the prominence given to physical geography, and the treatment of the whole subject on the basis of a scientific generalization. The underlying principle he thus expressed in the preliminary section of the above work, on *Geographical Teaching*: "It was not until the first quarter of the present century, when Ritter's great mind made its power felt in his remarkable generalizations on the facts given to the world by Humboldt, that it began to be suspected that geographical facts could be reduced to a *science*, in which hold good the same laws of mutual dependence of cause and effect that prevail in all the other physical sciences." The introduction of this philosophical method of teaching geography, the principle of which has been adopted by most other authors of school text-books on this subject, has exerted an important influence upon the general methods of instruction in schools; and, in this way, Prof. Guyot has done an important service to the cause of education. (See GEOGRAPHY.)

GYMNASIUM (Gr. γυμνάσιον, a place for bodily exercises, from γυμνός, naked), a term applied, in ancient Greece and Rome, to schools for physical education, but in modern Germany and some other countries of continental Europe, to a class of secondary schools which hold a middle place between elementary schools and the universities. In England and the United States, in which the colleges correspond to the German gymnasia, the term gymnasium is limited to places for physical exercises. We treat here (1) of the ancient gymnasium of the Greeks and Romans, and (2) of the schools designated by this name in Germany and other parts of continental Europe.

(1) Gymnasia were first introduced in Sparta and Crete; they afterwards became common in the Greek cities, and were, to a limited extent, adopted among the Romans. In the most ancient times, the gymnasia were leveled and inclosed places, with divisions for the several games. For the purpose of shade, rows of plane-

trees were planted, to which afterwards porticoes with sitting-rooms (ἐξέδραι), having stone benches around the walls, were added. At last, the gymnasia consisted of several buildings, which were joined together, and thus often formed very spacious structures, capable of holding many thousand persons. A detailed description of the ancient gymnasium is given by Vitruvius. The free youths were instructed in gymnastics, by a *paidotribes* (παιδοτρίβης), while the professional athletes were trained by a *gymnast* (γυμναστής). The whole institution was superintended by the *gymnasiarch* (γυμνασιάρχης). While, originally, gymnasia were only places for bodily exercises, they were afterwards used by philosophers, rhetoricians, and teachers of various sciences as places for instructing their pupils. Thus Plato taught in the Academy and Aristotle in the Lyceum of Athens.—The Roman republic had no special buildings which could be compared with the Greek gymnasia; during the reign of the emperors, the public baths (*thermæ*) served for the same purpose, and may be said to have gradually absorbed the gymnasia. (See PETERSEN, *Das Gymnasium der Griechen*, 1858.)

(2) In modern times, the name *gymnasium* has been commonly applied in Germany, since the time of J. A. Wolf, to those schools which prepare students for the universities. Some of these institutions, while holding the rank of a gymnasium, have different names, as *pædagogium*, *lyceum*, *Gelehrtenschule*, *Landesschule*, *Fürstenschule*. This class of schools has gradually developed from the cathedral and convent schools (q. v.) of the middle ages, which were designed to impart to the youth of the country the highest instruction accessible in those times, especially that needed for the priesthood. After the establishment of the universities, the cathedral and convent school assumed the character of preparatory schools. Their number increased rapidly, and the course of studies was steadily enlarged. In addition to the schools attached to cathedral chapters and convents, a number of schools of a similar rank were founded by the municipal authorities of many of the larger towns, as well as by many princes. The revival of classical studies, in the 15th century, greatly added to the reputation and social position of these schools. At the time of the Reformation, Melanchthon introduced more exalted views of classical studies as the basis of the classical school; and the educational efforts made by the Jesuits provoked a rivalry which, in many respects, had a beneficent influence. The civil wars and religious conflicts of the 17th and 18th centuries caused a stand-still for a time, and progress was not resumed until the end of the 18th century. A. H. Francke (q. v.) the founder of the celebrated institutions at Halle, favored, like all the Pietists, the *realistic*, in preference to the *humanistic*, studies and secured the introduction of geography and history as branches of instruction, and the appointment of special teachers of mathematics. But Gesner (q. v.), Heyne, (q. v.), and other champions of classical studies, fully secured their preponderance. The opposition made to the classics by the Philanthropists strengthened rather than weakened their position. At the beginning of the 19th century, a thorough reform of the gymnasia was inaugurated in Prussia, and gradually carried into effect in all the German states. The new arrangement sanctioned the predominance of classical studies, but, at the same time, provided for an improved plan of teaching the realistic branches; such as the natural sciences, geography, and mathematics. The supervisory right of the churches was restricted to religious instruction; and the supreme control of all the institutions of learning passed into the hands of the state government. The gymnasia now hold in the German states a privileged position, since no young man can be matriculated for any faculty of the university without having passed a final examination at the gymnasium. Violent attacks have been made upon this privileged position, and specially upon the important place which the course of studies of the gymnasia assigns to the classical languages; and, in some countries, the government has so far yielded to the growing opposition as to organize real gymnasia, in which the Greek language is altogether dropped, and the Latin at least greatly reduced. (See REAL SCHOOLS.) But the organization of the real gymnasia is far from being completed, and governments and legislatures appear to be inclined to uphold, in the main, the rights of the classical gymnasium. The defenders of the course of instruction as pursued in the gymnasia chiefly rest their pleas upon the argument that the present course, in its entirety, is best suited to elevate the pupils of these institutions to the level of our modern civilization, and to fit them to become intelligent members of modern society. The superintendence of the gymnasia is exercised either by the ministry of educational and ecclesiastical affairs, or, in some states, by a supreme educational council. They are, at stated times, examined by school councilors. At the head of a gymnasium, is a rector, or director, and the number of teachers varies with the number of the classes. No one can be appointed a teacher who has not studied at a university, and passed an examination before a commission appointed by the government. In Prussia, a gymnasium is generally divided into six classes, called *prima*, *secunda*, *tertia*, *quarta*, *quinta*, and *sexta*. The three higher classes are generally subdivided into two divisions, the upper and the lower. The time usually spent in a class, or in a division of one of the higher classes, is one year; and, a full course, at a Prussian gymnasium, generally requires nine years. In Bavaria, a gymnasium has four classes, and a preparatory school (called a Latin school), which comprises five classes. In Austria, the gymnasia were thoroughly reorganized in 1849, and now resemble, in their essential features, in Austria proper as well as in Hungary, the institutions of Germany. In Denmark, Sweden, and Norway, the gymnasia have the same characteristics as those of Germany. In Italy, the gymnasium

consists of five classes which correspond to the lower classes of a German gymnasium. It serves as a preparatory school to the lyceum, which has three classes. In Russia, the gymnasium has seven classes, besides a preparatory class. The German gymnasia resemble the Scotch grammar and high schools, and only differ from the English public schools for the upper and middle classes in being day schools, instead of the centers of large boarding establishments. The literature relating to gymnasiums is very numerous. — See, on the German gymnasium, the model of the others. Wiss, *Encyclopädie und Methodologie der Gymnasialstudien* (1830); Roth, *Gymnasial-Pädagogik* (1865); Laas, *Gymnasium und Realschule* (1875); Barnard, *Public Education in Europe* (1854).

GYMNASTICS (Gr. γυμναστική, from γυμνός, naked), a system of bodily exercises designed to develop muscular strength, and to promote general physical culture and health. In the article on *Calisthenics*, this subject has already been treated as far as it comprehends those light physical exercises which are especially adapted for females, although frequently used in the education of persons of the other sex. The term *gymnastics* was anciently used to denote the bodily exercises exclusively of boys and men, because those who performed them, in public or in private, were either entirely naked, or only wore a short tunic, called χιτών. Among the ancients, particularly the Greeks, gymnastics constituted the most essential part of education; and there was not a Greek town of any importance that did not have its gymnasium, or place for the regular physical training of youth, which was supplied with baths, accommodations for athletic contests, and conveniences also for the philosophers, sophists, and teachers, with their pupils, and all others who attended for intellectual instruction or amusement. The laws of Solon regulated the management of these gymnasia among the Athenians. One of these laws forbade all adults to enter a gymnasium while the boys were engaged in their exercises; but it was the practice for adults to attend for exercise at other times of the day, or in other portions of the building, specially set apart for men. Until boys reached the age of sixteen, gymnastics constituted but a part of their education; but, from sixteen to eighteen, it seems to have absorbed nearly their whole attention. At Athens, and in all the Ionian states, females were never permitted to attend the gymnasium; but at Sparta, and in some of the other Doric states, unmarried women attended, and took part in, the exercises, dressed in the χιτών. Instruction was given by regular teachers who were supposed to understand the physiological effects of each exercise, and thus to be able to assign to every youth such exercises as were best suited to his particular case. Gymnastics, at first, comprehended *agonistics* (the exercises of the public games) and *athletics*, or professional gymnastics as practiced by the athletes; but, in later times, these were entirely separated; and the gymnasia became places exclusively for physical education and training. (See Athens and Gymnasium.) There was almost entire uniformity in the exercises of the different gymnasia in various parts of Greece; the Dorians, however, made the hardening of the body, as a preparation for military life, a paramount aim; while the Athenians, and the Ionians in general, sought to impart grace and beauty, as well as strength, to the body and its movements, and to make physical health the basis of a sound and vigorous mind. These exercises partook largely of the nature of games, among which we find mentioned (1) that of the ball (σφαίρισις), played in various ways; (2) that of the rope, a boy holding each end, and one trying to pull the other across a line; (3) that of the top, played very much as in our own time; (4) the game of *five stones* (πεντάλιθος), like the jackstones of our day; (5) that of a rope drawn over a post on the opposite sides of which two boys stood and tried to pull each other up off the ground. Besides these, the more important exercises were swimming, riding, throwing the quoit and javelin, jumping and leaping, wrestling, boxing, running, and dancing. Among the Greeks, gymnastics was closely allied to the medical art, because systematic bodily exercise was considered to constitute not only an important means of preserving health, but a certain cure for a large class of diseases. They thus recognized the principle on which Ling has based his system of *kinesipathy*, or movement-cure. To the curative effects of exercise, Galen, Celsus, and some other ancient physicians refer in works still extant.—In the middle ages, there was no use of gymnastics, strictly speaking; the exercises employed in education partaking rather of the nature of athletics, and being almost exclusively for military training or drill, or the knightly amusement of the tournament. Among the lower orders, archery, foot-racing, wrestling, the use of the quarter-staff, etc., were common athletic sports; but there was no such thing as a systematic series of exercises for muscular development, until Basedow (q. v.) introduced gymnastics, as a part of education, in the *Philanthropin* at Dessau; and subsequently (1784) Salzmann adopted the same system for his institute. Gutsmuths extensively introduced the practice of gymnastics into Prussian schools, and wrote several works on the subject (*Gymnastik für die Jugend*, 1793; and *Turnbuch für die Söhne des Vaterlandes*, 1817). A still more valuable work was *Encyclopädie der Leibesübungen* (1804—18), by Vieth, a pupil of the *Philanthropin* at Dessau. Pestalozzi also favored gymnastic training as an important instrumentality in the general culture of man. In 1810, Jahn still further extended the system; and the next year, under his direction, was opened at Berlin the first public *Turnplatz*, the object of which was not only to encourage physical development but patriotic fervor among the young men, in opposition to the aggressive schemes of Napoleon I. After serving in the army in defense of his country, Jahn resumed the management of his gymnastic schools; but the government, finding their influence favorable to the spread of liberal ideas, suppressed them (1818). The system was, however, adopted in England, Switzerland, Sweden, Denmark, and some other countries, and became widely popular; and, in 1842, the king of Prussia ordered the introduction of these exercises, as a part of the school system. The *turn-vereine* also spread from Germany to the United States, where they are now very numerous.

As a department of education, gymnastics requires very careful regulation, having reference to the age and physical constitution of the pupil. Much injury may be done by requiring all the members of a school or of a class to perform the same exercises, especially if they are of a violent character; indeed, it may be doubted whether, up to the age of 16, for the ordinary purpose of physical development and health, boys need any thing more than abundant opportunity and time for the out-door sports and recreations in which their natural activity will generally prompt them to engage. Beyond that age, gymnastic exercises, properly regulated, may be made the means of laying the foundation of permanent strength and health. Military drill is often introduced into schools and colleges, and is found an efficient substitute for gymnastic exercises, or an excellent auxiliary to them. The testimony of educators is uniformly favorable to this kind of exercise in boys' schools, not only as an effective means of physical culture, but as imparting habits of attention, order, subordination, and prompt obedience. For schools of most grades, and for either sex, *light gymnastics* has been found to supply appropriate and efficient exercise. Of this character is the *new system of gymnastics* by Dio Lewis and others, the distinguishing peculiarity of which is its complete adaptation to every physical constitution and degree of strength. It dispenses with all fixed and cumbrous apparatus, and only employs such implements as bags of beans, light poles, or wands, rings, india-rubber straps with handles, etc. The exercises, being light and simple, can be performed in any room or hall; and yet their endless variety is such as to bring into healthful exercise every part of the muscular system and, at the same time, to give a pleasing, recreative occupation to the mind. This is especially the case when they are regulated by the rhythm of music. (See Calisthenics.) Those violent exercises ordinarily called *athletics*, such as boat-racing, jumping, putting the weight, throwing the hammer, etc., have, during the last 30 or 40 years, been very popular, particularly in the English universities. Boat-racing, in particular, both in British and American universities and colleges, has absorbed very much of the attention of the students, and excited much inter-collegiate rivalry. These sports have been, for some time, encouraged as favorable to physical culture; but their desirability has been recently called in question, and many educators are, at present, strongly disposed to repress all such inter-collegiate contests, (1) as leading to many vices, such as drinking, betting, gambling, etc.; (2) as dangerous to health, in consequence of the excessive strain upon the physical strength which they require; (3) as making mere bodily strength and its triumphs almost exclusively the aim of the college student, or, at any rate, secondary to intellectual and moral culture; and (4) as absorbing too much of the time, attention, and efforts of the students, and thus preventing the successful prosecution of their studies. Of course, all these evils result from that excessive spirit of rivalry or emulation, which is too often encouraged by injudicious parents and teachers, by unduly exaggerating the value of success in these athletic contests. Let these exercises be commended and encouraged as of intrinsic value, not as the means of attaining a useless, barren victory in a boat-race or other contest, but as the necessary means of cultivating those powers and virtues which are to enable the student to run a brave, manly, and Christian course through life, meeting all its emergencies not only with courage but physical endurance, and no objection can possibly be made to them.—See Markby, *Practical Essays on Education*, s. v. *Athletics* (London, 1868); Schreber, *Kinesiatrik* (Leipsic, 1852); Nahl, *Instructions in Gymnastics* (San Francisco, 1863); Wood, *Manual of Physical Exercises* (N. Y., 1867); Ravenstein and Hulley, *Gymnastics and Athletics* (London, 1867). (See also Calisthenics.)

HABIT, a tendency to repeat the same action, more or less unconsciously, or an inclination for the pursuits, occupations, or states to which the body or the mind has become familiar by use. Habit, as an automatic tendency, takes a wide range, not only extending over all our mental and bodily acts, but including likewise our moods of mind, our sources of indulgence, pleasure, ease, and recreation, and comprehending also, either by improvement or debasement, our entire moral and spiritual nature. The singular facility which is acquired by repeated action, in accomplishing what at first was either difficult or impossible, has never been satisfactorily explained. The fact, however, is universally recognized in the old saying, "Habit is second nature," as also in the useful educational maxim, "Practice makes perfect." "It conditions," says Rosenkranz (*Pedagogics as a System*), "formally all progress; for that which is not yet become habit, but which we perform with design and an exercise of our will, is not yet a part of ourselves." Physiologists profess to find a reason for this power of habit, in the sympathetic nerves; and some psychologists trace mental habits to the association of ideas. The extent to which habit influences the daily life of every one—even the youngest child, can scarcely be realized. Consciously or unconsciously, it enters, in some shape, into every effort at continuous action, physical or mental, and more or less controls it. From the dawn of intelligence, when the child first takes cognizance of material things, all through the period of self-education, which precedes systematic instruction, it is forming, of itself, habits of observation, comparison, and generalization, which are to constitute the basis of all subsequent intellectual activity. So is it also forming those habits which, taken together, make up what is called disposition, temper, etc. It is this tendency to contract habits which gives such plasticity to the minds and characters of youth, and which really underlies the power and office of education; for what we call training is nothing more than guiding and regulating the formation of habit. This relation of habit to education has never been more clearly or forcibly illustrated than by Dr. Johnson in his beautiful allegory called the *Vision of Theodore*: "As Education led her troop up the mountain, nothing was more observable than that she was frequently giving them cautions to beware of Habits; and was calling out to one or another at every step, that a Habit was ensnaring them; that they would be under the dominion of Habit before they perceived their danger; and that those whom Habit should once subdue, had little hope of regaining their liberty." While it is the period of formal education, at which the child especially needs to be protected from the influence of habit, to some extent and in some respects, the watchful care of the educator is required even from the earliest infancy to prevent the formation of injurious and almost ineradicable habits; indeed, there is scarcely a child who, on being sent to school for the first time, will not be found to have contracted habits, both physical and mental, which the teacher will find it necessary to strive to correct. One of his most important functions will be to detect and eradicate bad habits, as a kind of morbid growth; for, like weeds, these habits not only cumber the ground themselves, but render it sterile for any other productions. For example, what can be done with that most troublesome of all cases,—a "spoiled child," until the habits of self-indulgence, self-will, wayward caprice, and despotic control of others, which characterize it, are eradicated, or superseded by other dispositions? So, too, with habits of deceit, falsehood, cruelty, and many others that are apt to spring up in even very young minds. In regard to the intellect, the same principle holds true; for that natural development which precedes formal instruction may, indeed, be luxuriant, but cannot be regular. The mind of the most active child, under circumstances that present the very best opportunities for development, if it has been left entirely to itself, will be found to have acquired settled ways of observing, thinking, and speaking which it will be necessary to correct; and, besides, it will generally have become impulsive, impatient of any continuous attention, and prone to pass rapidly from one thing to another, in obedience to a mere momentary fancy or impulse. It will, therefore, be generally found that children, on being first subjected to regular instruction, need to have habits of attention formed, in place of those of inattention, which have been implanted by their own unconscious and unregulated activity. (See ATTENTION.) There are others, however, of a less general character which will demand special effort. As an instance, one of the earliest of these objectionable habits, and perhaps one of the most common, is the unconscious substitution in the child's mind of the symbol for the thing symbolized. This will be manifested by most children when shown, for example, the picture of a horse, and asked to state what it is. Usually the answer will be, "It is a horse;" from the habit of confounding things with their representatives. Hence, the unresisting facility with which children yield their minds to mere memorizing and rote-learning, the effect of which is to confirm the bad habit referred to, and, in its final result, to extinguish intelligence and destroy mental activity. While some of the habits which demand the teacher's attention at this early stage, are common to all children, in a greater or a less degree, there are others of great variety, dependent upon either peculiar traits of character or peculiar circumstances of early life. The law of the formation of habit is *repetition* or *exercise*. This is recognized in many departments of instruction, as an indispensable means of imparting facility, readiness, and promptitude, without which certain accomplishments could not be made, or if made, would be comparatively useless. For example, of what value would the multiplication table be if its use required a conscious effort of mind at every application of any of its details? The same principle is illustrated by the playing of a musical instrument, by the use of language in speaking and writing, and by the varied bodily movements needed in daily life. Good habits should be formed at as early a period as possible; because experience shows that, when thoroughly established in childhood or youth, they generally continue, with more or less strength, through life. Hence the importance of making those qualities and observances habitual, which constitute the elements of practical success in every walk of life; such as punctuality, order, regularity, and perseverance; to which may be added neatness, courtesy, attention to the wants of others, forbearance, and self-control. For the same reason, bad habits should be eradicated before they have reached that mature state, after which they scarcely ever entirely disappear. It is, indeed, rarely the case that thoroughly fixed habits are wholly removed; hence, the teacher should strive to counteract their evil influence, or neutralize their activity, by implanting those of a contrary nature. In dealing with the bad habits of children, the teacher should appreciate, and make due allowance for, the force of habit.

He cannot uproot them at once and by violence. As time is an important element in their formation, so is it also in their eradication; and, therefore, the child is to be led along a divergent path which, by degrees, will conduct him away from the vicious impulse which, all the while, tends to overpower his best resolutions. "Either we should not attempt the conquest of habit," says Miss Edgeworth, in *Practical Education*, "or we should persist till we have vanquished. The confidence which the sense of success will give the pupil will probably, in his own opinion, be thought well worthy of the price. Neither his reason nor his will was in fault; all he wanted was strength to break the diminutive chains of habit, which, it seems, have power to enfeeble the captives exactly in proportion to the length of time they are worn." Whatever force or coercion may be found necessary for this purpose should be gradually relaxed, till the child has formed, to some extent, the habit of self-control; which will become the foundation of most other good habits. The implanting of particular habits must not, however, be deemed the whole of moral training; there must be the culture of conscientiousness, of intelligence, of self-respect, of a constant impression and recognition of the Divine presence, and of all the other principles of human nature, by means of which it rises to the higher plane of moral responsibility, consciously exercising its own faculties, not blindly obeying habitual tendencies received from others. Properly educated, the human being, in the exercise of his own will and conscience, enlists the power of habit in support of his own moral conclusions, making a useful servant of that by which so many others are hopelessly enslaved. In this connection, Rosenkranz says, "Education must procure for the pupil the power of being able to free himself from one habit and to adopt another. Through his freedom, he must be able not only to renounce any habit formed, but to form a new one; and he must so govern his system of habits that it shall exhibit a constant progress of development into greater freedom. We must discipline ourselves, as a means toward the ever-changing realization of the good in us, constantly to form and to break habits." And it is in the attainment of this grand object of self-culture, that habit may render the important aid referred to, in making the exercise of self-criticism, conscientious watchfulness of our own conduct, and obedience to the dictates of reason and religion, easy and continuous by becoming habitual. Thus it is that the man for whom education has done all that it can do, within the utmost scope of its power, truly finds habit not his master but his most useful servant and friend.

HADLEY, James, a distinguished American scholar and educator, was born in Fairfield, Herkimer Co., N. Y., March 30., 1821, and died in New Haven, Ct., Nov. 14., 1872. At the age of 21, he graduated at Yale College, at the head of his class; and in 1845, completed a course of study at the Theological Seminary in New Haven. The same year, he commenced his career as a teacher of the Greek language in Yale College, filling successively the positions of tutor, assistant professor, and, in 1851, professor, succeeding President Woolsey in the latter position. He was a man of profound and varied scholarship, including linguistic, philological, and mathematical attainments. He was versed not only in the classical languages, but in most of the oriental, including Sanskrit, Hebrew, Arabic, and Armenian; also in the Gothic, and in many of the modern languages. He was a leading member of the American Oriental Society, and during the last two years of his life, its president. He wrote the *History of the English Language* for the introduction of Webster's Dictionary, and published a *Greek grammar* (1860), and *Elements of the Greek Language* (1869). His essay on the Greek accents was translated into German, and republished in Curtius's *Studien zur griechischen und lateinischen Grammatik*. He was also the author of *Lectures on Roman Law*, and *Essays Philological and Critical*, which were edited by Prof. W. D. Whitney, and published after his death (1873).

HAEHN, Johann Friedrich, a German educator, born in 1710; died in 1789. After being for a time teacher and inspector of the school connected with the monastery at Bergen, he went to Berlin, where he became acquainted with Hecker (q. v.), and, in 1753, was appointed inspector of the latter's real school, in which position he perfected his method of instruction. He wrote, besides other text-books for his pupils, a compendium of geometry, trigonometry, and military art, in synopses. In the arrangement of these synopses, lies the peculiarity of his method, called the *tabular* or *literal method*, according to which the first letters of the principal subjects of instruction were written on the board, with the principal sentences contained in the lesson, which were put down in tabular form. By these means, he designed to facilitate not only the memorizing of the lessons, but to produce thoroughness and thoughtfulness in the study of each subject. In every lesson, he illustrated his instruction as much as possible by means of objects, of which he had a large collection. His method was copied and perfected by Felbiger (q. v.), but gradually fell into disuse as being sowewhat impracticable. In the latter part of his life, he was appointed director of the gymnasium in Aurich, which position he retained until his death.

HALF-TIME SCHOOLS, a class of schools which, as the name denotes, hold their sessions during only one half of each day, thus affording an opportunity to a numerous class of children, employed in workshops, factories, stores, etc., to attend school without giving up their employments. They are thus kindred, in object, with evening schools, which in a certain sense, may be considered as half-time schools. The half-time system is encouraged in England by a special government grant, and is said to work well; especially where, by the co-operation of the employers, the pupils (half-timers) are made to attend school with regularity. These half-time schools are examined according to the same standards as full-time schools; but the amount paid for half-time regular attendance is only half of that paid for full time. In other parts of Europe, and in some of the cities of the United States, the half-time system is said to have met with encouraging results. This plan originates in the effort to adapt the public schools to the circumstances and needs of all classes of the community; and thus, in a measure at least, supersedes the necessity of compulsory laws. The principle, however, admits of an application without the organization of separate schools, which might be objectionable in American communities, as establishing a class system of education. The same object may be carried out, it has been suggested, by a *half-time course of study*, with grades and subjects adapted to the purpose of giving the half-time pupils a good elementary education in a reduced time. Of course, some degree of uniformity would be sacrificed by such an arrangement; but it is claimed that no real efficiency would be lost in the actual working of the school system, or in the education received. On the contrary, it is urged that the union of labor and schooling has many advantages, the one assisting the other; and that the half-time pupils prove, as a rule, as apt scholars as their full-time class-mates, if not so far advanced. Besides, it affords an encouragement to manual labor, and gives it an honorable recognition, which is of great importance in every community, especially where the boy who has had even an ordinary school education is prone to look down upon all mechanical trades and artisanship as unworthy, fixing his ambition rather upon mercantile or literary pursuits. The true interests of a community depend in a great measure upon the productive industry of educated, skillful, and self-respecting artisans; and if the half-time system can foster, in any degree, this important class of occupations, it deserves the attention and support of statesmen and educators.

HALL, Samuel Read, a noted American teacher, the first principal of the first teachers' seminary established in the United States, was born in Croydon, N. H., Oct. 27., 1795. His parents having removed to Vermont, he received his early education in that state; but subsequently attended an academy in New Hampshire. He afterwards studied theology, and entered the ministry, during the whole time, however, teaching school. In 1823, he opened a seminary, the special object of which was to educate teachers. This school was composed chiefly of advanced students, but a class of younger pupils was formed to serve as a model school. He wrote and delivered a course of *Lectures on School-keeping*, and compiled, in 1827, the *Geography and History of Vermont*, which met with much success. In 1829, his *Lectures* were published; and, about the same time, he was appointed principal of the English department of Philips Academy, at Andover. While there, he founded the American School Agents' Society, the object of which was to employ agents to visit different parts of the country, for the purpose, by lectures and otherwise, of awakening an interest in the cause of education. Mr. Hall was one of the original founders of the American Institute of Instruction, and, in 1833, read before it a lecture on the *Necessity of Educating Teachers*, in which he said, "In this thirty-third year of the 19th century, there is not, in our whole country, one seminary where the educator of children can be thoroughly qualified for his important work." (See NORMAL SCHOOLS.) Between 1830 and 1838, he published a number of educational works, and also contributed quite largely to the *Annals of Education*. In 1837, he was appointed principal of a teachers' seminary in Plymouth, N. H., and subsequently filled the office of county superintendent in Vermont. His efforts in behalf of normal school instruction were of the most earnest and devoted character, and did much to awaken public opinion in its behalf.—See BARNARD, *American Teachers and Educators*.

HAMILTON, James, an English merchant, was born about 1769, and died in Dublin, in 1831. He removed to Hamburg in 1798, where he learned the German language after a method of his own, which he afterwards advocated and put into practice under the name of the *Hamiltonian System*. His method consisted in discarding the grammar of a language entirely, and teaching it practically by placing in the pupil's hands a book of the foreign language with a literal interlinear translation, giving always the primitive signification of each word, and never varying it. By translating thus, word for word, from the foreign language into the pupil's own, and then back again, a good general idea of the language was obtained—a sort of rough-cast for practical use. By this method, of course, all idiomatic and figurative expressions, secondary meanings of words, etc., remained to a certain extent unintelligible, the learner getting only a general idea of the meaning of the sentence. To go further than this, however, was beyond Hamilton's plan. The Hamiltonian method has had the good effect of inducing teachers of modern languages to discard the old pedantic method of requiring the student to commit to memory a full set of paradigms and grammatical rules before commencing the actual translation of a single sentence, and has led to the adoption of a system which combines the advantages of the Hamiltonian method with that formerly pursued. (See MODERN LANGUAGES.)

HAMILTON COLLEGE, at Clinton, Oneida Co., New York, was founded in 1812. It is not under the control of any religious denomination, but a majority of its board of trustees are Presbyterians, or in general sympathy with that denomination. The college buildings stand in a park of 15 acres. The institution has endowments amounting to about $300,000. It possesses a fine chemical laboratory, improved philosophical apparatus, geological and mineralogical cabinets, collections in natural history, an herbarium, and a well-equipped astronomical observatory, at which 25 asteroids and 2 variable stars have been discovered, by its director, Dr. C. H. F. Peters. The college and society libraries contain 12,000 volumes. The cost of tuition is $75 per year. There are 20 permanent scholarships of from $60 to $100 a year for the benefit of needy and deserving students. The interest of beneficiary funds, amounting to about $3000 a year, is also distributed among needy students. The curriculum is the ordinary four years' course of American colleges. A law department was opened in 1855. In 1875—6, there were connected with the college, 12 instructors and 171 students (20 law, 150 collegiate, and 1 special). The whole number of *alumni* was 1,532, of whom 1,054 were living; of graduates of the law school, 97. The presidents of the college have been as follows: the Rev. Azel Backus, S. T. D., 1812—16; the Rev. Henry Davis, S.T.D., 1817—33; the Rev. Sereno Edwards Dwight, S. T. D., 1833—5; the Rev. Joseph Penney, S. T. D., 1835—9; the Rev. Simeon North, LL. D., S. T. D., 1839—57; the Rev. Samuel Ware Fisher, S. T. D., LL. D., 1858—66; and the Rev. Samuel Gilman Brown, S. T. D., LL. D., the present incumbent, appointed in 1866.

HAMILTONIAN METHOD. See HAMILTON, JAMES.

HAMPDEN SIDNEY COLLEGE, in Prince Edward Co., Va., 7 miles south of Farmville, founded in 1776, is under Presbyterian control. The name of the post-office is the same as that of the institution. The college is supported by tuition fees and the interest on an endowment of $95,000. It adheres to the old college curriculum. The cost of tuition is $60 per year, with French, German, and civil engineering as extras. In 1875—6, there were 5 instructors and 77 students. The libraries contain about 7,000 volumes. The presidents have been as follows: the Rev. Stanhope Smith, D. D., 1776—9; the Rev. J. Blair Smith, D. D., 1779—89; the Rev. Dury Lacy, 1789—97; the Rev. Archibald Alexander, 1797—1806; the Rev. Wm. S. Reid, 1806; the Rev. Moses Hoge, 1807—20; Jonathan P. Cushing, A. M., 1821—35; the Rev. Geo. Baxter, D. D., 1835—6; the Rev. D. L. Carroll, D. D., 1836—8; the Hon. Wm. Maxwell, 1838—44; the Rev. P. J. Sparrow, D. D., 1845—7; the Rev. S. B. Wilson, D. D., 1847—8; the Rev. L. W. Green, D. D., 1848—56; the Rev. A. L. Holladay, 1856; and the Rev. J. M. P. Atkinson, D. D., the present incumbent, appointed in 1857.

HANNIBAL COLLEGE, at Hannibal, Mo., under the control of the Methodist Episcopal Church, South, was founded, in 1869, for the education of both sexes. It has an endowment of 35 acres of land, and possesses chemical, physiological, astronomical, and other scientific and philosophical apparatus. It is supported by tuition fees. The college is divided into 3 departments: preparatory, high-school, and collegiate. These three departments are sub-divided into six schools, as follows: (1) *School of English literature;* (2) *School of physics;* (3) *School of languages,* including Hebrew, Greek, Latin, German, and French, together with lectures on comparative philology; (4) *School of mathematics;* (5) *School of metaphysics;* and (6) *School of fine arts,* including vocal and instrumental music, painting, drawing, wax-work, and worsted work. A commercial course and an evening school have been organized. The cost of tuition, in the preparatory department, is $10.50 per quarter; in the academic and collegiate, $12.50. In 1875—6, there were 11 instructors and 140 students. The Rev. J. F. Hamilton was president from 1869—71, when the Rev. Leo Baier was appointed. The college is at present suspended (1877).

HANOVER COLLEGE, at Hanover, Ind., organized in 1827, and chartered in 1833, is under the control of the Presbyterians. It has a campus of 16 acres and a fine college building. Its entire grounds embrace over 200 acres. The libraries contain about 7,500 volumes. The value of its buildings, grounds, and apparatus is $145,000; the amount of its productive funds, $100,000. Tuition is free. The institution has a preparatory and a collegiate department, the latter comprising a classical and a scientific course. In 1875—6, there were 10 instructors and 135 students (74 collegiate and 61 preparatory). The Rev. Geo. C. Hickman, D. D., is (1876) the president.

HARMONY in Development, as regards both the mental and bodily faculties, is now viewed by educationists as the most important aim of education. "One part of instruction," says Dittes (*Schule der Pädagogik,* 1876), "must not contradict another; nothing should be neglected, nothing exaggerated; all the faculties of the pupil should be cultivated as much as possible, and all the different objects and departments of education should receive attention, without interruption, and in due proportion. The intellect should not be favored at the expense of the moral and physical nature; and hygienic considerations should not be left out of view. The teacher should be especially careful not to accord too much time and attention to favorite branches of study." The latter is a very important admonition. Every course of study should be arranged with a view to the average condition of the growing mind and its needs; and, therefore, should comprise such a variety of subjects as will call into exercise the different mental powers, and thus become instruments in their culture and development. The scientific teacher will, however, watch for decided peculiarities of character,—special aptitudes, traits of genius, etc., and will modify his course of proceeding so as, while giving scope for the unfolding of these particular powers, or talents, not to permit them to repress the growth of other indispensable faculties. Thus, a pupil may show a special inclination and talent for drawing, which may very properly be allowed its full development; but, in doing this, the educator is not to permit all other mental or manual occupations to be neglected. Indeed, this special gift may be kept in abeyance, and stimulus applied, for a time at least, to penmanship, and to the study of language, science, or other important subjects. Some pupils, as a further example, may be too prone to the exercise of the imagination; in which case, they should be required to study science or mathematics. Others may show an almost exclusive bent for calculation or mathematical reasoning, which must, of course, be corrected by the pursuit of studies calling into exercise other powers of the mind; such as history, general literature, mental philosophy, etc. Knowledge is sometimes called the food of the mind, by the assimilation of which its various powers are nourished; hence, to continue the metaphor, there should be a due variety of this food, and the different kinds should be selected with a view to the particular condition and needs of the system which is to be supplied with nutriment. As in physical education, if a pupil manifests any signs of abnormal development or morbid growth, such, for example, as distortion of the limbs or curvature of the spine, continuous exercises and postures are prescribed to correct this tendency; so, in every department of education, a harmonious development can only result from a discriminative application of those agencies which call into active and habitual exercise the powers of mind and body. Such a development implies, too, a full recognition of all the relations and powers of the human being, embracing not only the cultivation of those capacities which concern him as an individual, but also those on which his happiness and usefulness as a social and moral being depend. How miserable is the mere student, the solitary genius, cut off from the exercise of the social sympathies and deprived of social enjoyments by a one-sided development! It is no answer to this, that the world may be benefited by his brilliant thoughts and his deep intuitions; for the interests of the individual, as such, claim consideration; and besides that, the best creations of genius have been often impaired or marred by the effects of this morbid development. Of this Byron, Shelley, and Poe are examples. The educator must recognize that there is a body, a mind, and a soul to be addressed and cultivated; and that man has social, moral, and religious faculties, without the harmonious development of which he cannot properly fulfil his destiny, nor attain happiness. The special claims of particular vocations, it is said, demand one-sided culture. Of this there is no doubt; but preceding it, and hence underlying it, there should be such general culture as the circumstances of man, as *man*, require. Profession or business comprehends, in general, but one relation; and unfortunate, therefore, is he who can meet the demands of only that relation, unable to perform aright the domestic, social, political, and religious duties which are inseparably connected with the position of every person in this life. In order to perform these duties, every person is endowed with special faculties, which, by the want of proper cultivation in early life, or by disuse, may be so enfeebled as to be unfit for exercise; and the harmonious development of these is the only true aim of education. If all these faculties do not, at an early age, receive their due share of training, self-education, at a later period, cannot, but within very narrow limits, supply the deficiency. The individual will always find himself more or less crippled, because no self-culture can entirely supply the place of early habits. To the doctrine of harmonious development, it has been objected that special innate endowments cannot be repressed by education; and to address other faculties will only result in bestowing superficial accomplishments of no practical value. Thus a youth of decided mathematical genius could never become more than an imperfect linguist: and one with special talent for language would be likely to make but indifferent attainments in science. Harmonious development, however, does not require the repression of special endowments, but the cultivation of what may be called the *general powers*, in such a way as to give support to each particular endowment. A wise educational training, commenced at the earliest childhood, and continued through each successive period of the formative state of human character, will not only fit for any particular vocation for which there may be a special bent, but will also prepare the individual for general usefulness, and render him able to enjoy the wonders of science, and the beauties of nature and art, as well as to participate in all other pleasures incident to his existence as a social and rational being. (See Genius.)

HARNISCH, Christian Wilhelm, a German educator and writer, born Aug. 28., 1786, died Aug. 18., 1866. After studying at the universities of Halle and Frankfort on the Oder, and acquainting himself, in Berlin, with Pestalozzi's method, he was appointed, in 1812, teacher in the training school of Breslau: and, in 1822, director of the training school of Weissenfels. In 1847, he became pastor of a church in a small town, and remained in that position until 1861. Soon afterwards, he was seized with insanity, from which he never recovered. In his writings, as well as in all his teachings, he gave a prominent place to religion, and to bodily exercises, such as bathing, gymnastics, etc. He also took great interest in the education of deaf-mutes. The influence which he exerted on the development of the common-school system of Prussia, was very considerable. Among his most important works are, *Die deutschen Volksschulen* (1812), which appeared in a revised form under the title of *Handbuch für das deutsche Volksschulwesen* (1820, 4th edit., 1839); *Darstellung und Beurtheilung des Bell-Lancaster'schen Schulwesens* (1819); *Der jetzige Standpunkt des gesammten preussischen Volksschulwesens* (1844), and *Die künftige Stellung der Schule, vorzüglich der Volksschule, zu Kirche, Staat und Haus* (1848). The autobiography of Harnisch was published after his death by Schmieder (*Mein Lebensmorgen,* 1868).

HARTLIB, Samuel, was the son of a Polish merchant of Elbing, Prussia. His mother, being an English woman, removed him, at an early age, to London (1636), where he afterwards became the friend of Milton, and labored with him for the advancement of learning. It was to Hartlib that Milton adressed his *Tractate on Education.* His attention was turned specially to agriculture, for the improvement of which he gave freely of his time and income, making experiments in husbandry, and publishing treatises on the subject, with such assiduity and success, that the parliament of Cromwell voted him an annuity of £100, which the succeeding parliament, however, revoked. He rendered important service to the time in which he lived by his publication of Sir Richard Weston's *Discourse on Flanders Husbandry,* in 1652; and, probably, our own time may trace a direct indebtedness to him, inasmuch as the germ of the modern *agricultural college* may be found in his *Propositions for erecting a College of Husbandry* (London, 1651). Notwithstanding his unselfish life and great public services, acknowledged by the annuity above mentioned, he is thought to have died in want.—See Barnard's *Journal of Education,* vols. XI. and XII.

HARTSVILLE UNIVERSITY, at Hartsville, Ind., under the control of the United Brethren in Christ, was chartered in 1851. It grew out of the Hartsville Academy, which was transferred by its trustees to the church, in 1848. It is supported chiefly by donations and tuition fees. The available endowment amounts to $20,000; the entire endowment is $54,000. The college has a good achromatic telescope, philosophical and chemical apparatus, and an increasing cabinet. The library contains between 700 and 800 volumes. The regular tuition fees vary from $15 to $21 per year. It has a preparatory and a collegiate department, with a classical and a scientific course; also a theological department. Facilities are afforded for instruction in the commercial branches and in music. In 1874—5, there were 9 instructors and 159 students, of whom 71 were of the collegiate grade. The principals and presidents have been as follows: James Mc. D. Miller, 1849—52; David Shuck, 1852—64; John W. Scribner, 1864—73; David Shuck, 1873—4; and the Rev. William J. Pruner, the present incumbent, appointed in 1874.

HARVARD, John, an English non-conformist divine, who graduated at the university of Cambridge, in 1631, and emigrated to Charlestown, Mass., where he died Sept. 24., 1638. Few particulars of his life are known. He appears, however, to have been active outside of his profession, as we find him appointed, in 1638, "to consider of some things tending toward a body of laws." At his death, he bequeathed £700 and about 300 volumes for the founding of a college, the present Harvard University of Cambridge. The *alumni* of the university, in 1828, erected a granite monument to his memory in the burial ground of Charlestown. The address on this occasion was delivered by Edward Everett, who was afterwards president of the university. (See Harvard University.)

HARVARD UNIVERSITY, the oldest institution of learning in the United States, comprehends *Harvard College,* the *Divinity School,* the *Law School,* the *Medical School,* the *Dental School,* the *Lawrence Scientific School,* the *Bussey Institution* (a school of agriculture and horticulture), the *Observatory,* the *Botanic Garden and Herbarium,* the *Library,* the *Peabody Museum of American Archæology and Ethnology* (a constituent part of the University, though its relations to it are affected by certain peculiar provisions), and the *Museum of Comparative Zoölogy.* These are all in Cambridge, Massachusetts, except the Medical School, which is on North Grove street, Boston; the Dental School, at No. 50 Allen street, Boston; and the Bussey Institution, at Jamaica Plain, now within the limits of Boston. The Episcopal Theological School at Cambridge appears in the catalogue, but has no connection with the University. Students in regular standing in any one department of the University are admitted free to the instruction given in any other department, with the exception of exercises carried on in the special laboratories. No one is excluded from any department on account of color.

In 1636, the colonial legislature agreed to give £400 toward a school or college, but whether this sum was ever actually paid is doubtful. In 1639, it was "ordered, that the colledge agreed upon formerly to bee built at Cambridg shal bee called Harvard Colledge," in honor of the Rev. John Harvard of Charlestown, who, dying in 1638, had left to the institution about £700 and a library of over 300 volumes. The college was opened in 1638, and the first class (9) graduated in 1642. The same year a board of overseers was constituted; and, in 1650, a charter was granted, under which the institution became a corporation, with the title of the "President and Fellows of Harvard College." In early times, it received much legislative aid, and was intimately connected with the government, but its connection with the Commonwealth was dissolved in 1865. The corporation consists of the president, five fellows, and the treasurer, who, subject to the confirmation of the overseers, fill their own vacancies. The board of overseers is composed of the president and treasurer, *ex officio,* and 30 members, elected by the graduates of five years' standing, and holding office six years, five being chosen each year. The corporation nominates the professors and other officers of instruction constituting the different faculties of the University, who must be confirmed by the board of overseers. The Medical School was established in 1782, the Botanic Garden in 1807, the Law School in 1817, the Divinity School in 1819, and the Observatory in 1839. The Lawrence Scientific School was founded, in 1847, by Abbott Lawrence, by a gift of $50,000, subsequently increased. The Museum of Comparative Zoölogy was established, in 1859, by a grant from the state and the gifts of individuals through the influence of Agassiz, who was its director till his death, and whose invaluable collections are here deposited. The Peabody Museum was founded by George Peabody, who gave $150,000 in 1866. The Dental School was organized in 1868. The Bussey Institution was endowed by the will of Benjamin Bussey, in 1842. The lands belonging to the University in Cambridge, comprise about 60 acres. The college yard contains about 22 acres, tastefully laid out and adorned with many stately elms. In the yard, are 21 buildings, including the president's house, four professors' houses, the chapel, library, law school, and seven dormitories, the remaining six buildings being used for offices, recitation rooms, laboratories, etc. The oldest of these is Massachusetts Hall, erected in 1720, and occupied by Continental troops in 1775—6. Adjacent to the yard, are two other dormitories, the Gymnasium, Memorial Hall, and the Lawrence Scientific school. A little north, and near each other, are the Museum of Comparative Zoölogy and the Divinity School; and about three fourths of a mile N. W., and also near each other, the Observatory, and the Botanic Garden and Herbarium. The most magnificent building is the Memorial Hall, erected at a cost of $420,000 by the *alumni* and friends of the college in commemoration of the students and graduates of the University who died in the national service during the civil war of 1861—5. It is built of red and black brick, with copings and window tracery of Nova Scotia stone, and is 310 ft. long by 115 ft. wide. The interior comprises three grand apartments: a dining hall, 164 by 60 ft., and 80 ft. high, capable of seating 1000 persons; memorial vestibule, 112 by 30 ft., and 60 ft. high; and the Sanders theater, for commencement exercises, etc., arranged, on the plan of classic theaters, and accommodating 1,500 spectators. The dining hall, said to be the grandest college hall in the world, is used for college festivals, and by the Dining Hall Association, an organization supported and managed by students for the purpose of supplying board at cost. Its walls are hung with the portraits of former college worthies, and its windows are intended to be memorial. Between the dining hall and the theater is the memorial vestibule, surmounted by a tower 200 ft. high. The interior is surrounded by an arcade of black walnut, with marble tablets inscribed with the names of 140 students commemorated, and the dates and places of their death. The walls above are simply decorated, in color, with Latin inscriptions concerning patriotism, duty, and immortality. The property of the University, in 1876, (not including the buildings, collections, and public grounds) amounted to $3,139,218. The income of the University, in 1874—5, was $473,305. The libraries of the University contain, in the aggregate, 211,000 volumes. They include the following: (1) College Library (in Gore Hall), 155,000 vols.; (2) Library of the Botanic Garden, 4,000 vols.; (3) Of the Divinity School, 17,000 vols.; (4) Of the Medical School, 2,000 vols.; (5) Of the Museum of Comparative Zoölogy, 12,000 vols.; (6) Law Library, 15,000 vols.; (7) Libraries in the Lawrence Scientific School, 3,000 vols.; (8) Phillips Library at the Observatory, 3,000 vols. There are also 15,000 or 20,000 volumes in the society libraries of the students. There are two physical and three chemical laboratories, a zoölogical, a physiological, and a geological and palæontological laboratory at the Museum of Comparative Zoölogy, a mineralogical collection in Boylston Hall, and extensive natural history collections at the Museum of Comparative Zoölogy. The large collections of the Peabody Museum are exhibited in Boylston Hall. The Gray collection of engravings in Gore Hall holds a high rank. The Observatory is admirably equipped with astronomical instruments, including one of the best equatorials in the world. The instruction of the College and Scientific School, in practical astronomy and geodesy, is given at the Observatory; in Botany, at the Botanic Garden; and in zoölogy, geology, and palæontology, at the Museum of Comparative Zoölogy. The course of studies in the College leads to the degree of Bachelor of Arts, and covers four years. The curriculum is extended and varied, being so arranged that the old prescribed college course may be pursued, or other courses, according to the taste or purposes of the student. The studies of the freshman year are prescribed. The prescribed studies of the sophomore year fill four hours a week in history and rhetoric; and those of the junior year, two hours a week in philosophy, besides certain written exercises. In the senior year only certain written exercises are prescribed; sophomores are required to take ten hours a week of elective studies; and juniors and seniors, twelve hours. The attendance by seniors upon recitations is voluntary. Several of the freshman studies may be anticipated at the entrance examination; and the prescribed sophomore and junior studies may be anticipated at the same time, or by examinations at the beginning of the respective years. Written examinations form a marked feature of the method of instruction, occurring frequently, during term time, in the different branches, and at the close of each year, in the studies of the year. Special honors are given at graduation for excellence in the following departments: ancient languages, classics, modern languages, philosophy, history, mathematics, physics, chemistry, natural history, music. For honors in modern languages, the candidate must present himself for examination in Italian, Spanish, or English, as well as in French and German. One of the ancient languages must be Hebrew or Sanskrit, in addition to Latin and Greek. A grade of second-year honors in classics and mathematics has been established, open to sophomores and juniors, and to seniors who intend to be candidates for final honors after graduation. For final honors in ancient languages and classics, second-year honors in classics must have been taken; and, for final honors in mathematics, second-year honors in the same department. The requisitions for admission at Harvard are higher than in any other college in the country. Instead of passing the entire entrance examination at the time of admission to college, candidates for the freshman class may be examined upon five or more subjects the year previous, thus dividing the examination into two. In 1876, the system was inaugurated of holding an examination for admission in Cincinnati, contemporaneously with the examination in Cambridge, to accommodate Western students. In 1876—7, the elective courses were thrown open to students 21 years old and upward, not candidates for the degree of A. B., who are not required to pass the general entrance examination, but must satisfy the faculty of their fitness to pursue the particular courses which they elect. A certificate of proficiency will be given to such as pursue their studies for a year, and pass satisfactory examinations. (For additional details respecting the requisitions for admission and the curriculum, see COLLEGE.)— The cost of tuition in the college is $150 per year. One hundred and four scholarships have been established, varying in annual income from $40 to $300, for the aid of needy and deserving students. There are also beneficiary funds having an annual income of about $750, which is usually distributed in gratuities of from $50 to $100; a loan fund, the interest of which, amounting to more than $2,000 annually, is lent in sums of from $50 to $150; monitorships &c., amounting to about $1200 a year; and a number of prizes. According to the University catalogue, "the experience of the past warrants the statement that good scholars of high character but slender means are seldom or never obliged to leave college for want of money." In the Lawrence Scientific School, five regular courses, of 4 years each, are offered: civil and topographical engineering, leading to the degree of Civil Engineer; mining engineering, of which the first three years are identical with the first three years of the preceding course, leading to the degree of Mining Engineer; chemistry, Bachelor of Science; natural history, S. B.; mathematics, physics, and astronomy, S. B. Candidates for these courses are required to pass an entrance examination, and the degrees are conferred only after examination. There is a one year's course in the elements of natural history, chemistry, and physics, for teachers. The cost of tuition is $150 per year. Four scholarships, of the annual value of $150 each, have been established. The School of Mining and Practical Geology, founded by Samuel Hooper in 1865 by the gift of $50,000, was, in 1874—5, merged in the Lawrence Scientific School. The Bussey Institution has a superb estate of 360 acres, containing a fine building, a farm, greenhouses, propagating-houses, etc. The Arnold Arboretum, founded by James Arnold of New Bedford, is established here. The institution is designed to give thorough instruction in agriculture, useful and ornamental gardening, and stock-raising, and to this end affords courses in physical geography, meteorology, geology, chemistry, physics, botany, zoölogy, entomology, French, and German. Instruction is given by lectures and recitations, and by practical exercises in the laboratory, greenhouse, and field. Frequent examinations are held. The regular course for a degree occupies three years; the instruction of the first year is given at the Lawrence Scientific School. Candidates for admission to this course are required to pass an examination. Special courses may, however, be taken by persons qualified to pursue them. The regular tuition fee is $150, but all tuition fees are freely remitted to poor and meritorious students. Harvard is the pioneer among American institutions in raising the standard of professional education, in reforming the methods of instruction and in requiring examinations for admission in law and medicine. The full course in the Divinity School is three years. Candidates not Bachelors of Arts are required to pass an examination for admission to this course. Its satisfactory completion entitles the student to the degree of Bachelor of Divinity. Students may be admitted to partial courses without examination. The cost of tuition is $50 per year. Nine scholarships have been established, varying in annual income from $125 to $260; and there are other funds for the assistance of needy students. The course in the Law School is three years, upon the completion of which and the passing of satisfactory examinations, the degree of Bachelor of Laws is conferred. In 1877—8 and thereafter, candidates for admission not Bachelors of Arts will be required to pass an examination, though persons not candidates for a degree will be admitted without examination. The cost of tuition is $150 per year. Eight scholarships, of the annual value of $150 each, have been established. The plan of study in the Medical School was radically changed, in 1871, from that previously prevailing there and still pursued in other medical institutions in this country. Instruction is now given by lectures, recitations, clinical teaching, and practical exercises uniformly distributed throughout the academic year. The regular course extends over three years, through which written examinations on all the main subjects of medical instruction are distributed. Upon the completion of this course and upon passing satisfactorily the required examinations, the degree of Doctor of Medicine is conferred. In 1877—8 and thereafter, candidates for admission to the regular course must present a degree in letters or science from a recognized college or scientific school, or pass an examination; but persons not candidates for a degree may be admitted to partial courses without examination. The Massachusetts General Hospital, adjacent to the School, and the City Hospital, with other similar institutions in or near Boston, afford admirable advantages for clinical instruction, for the study of practical anatomy, and for witnessing operative surgery. The cost of tuition is $200 per year. Four scholarships, of the annual value of $200 each, have been established. Instruction in the Dental School is given by lectures, recitations, clinical teaching, and practical exercises, uniformly distributed throughout the academic year. The regular course is of two years, and examinations are held at the close of each. The degree of Doctor of Dental Medicine is conferred upon candidates 21 years old and upward, who have studied medicine or dentistry three full years (at least one continuous year at this school), upon presenting a satisfactory thesis, and passing the required examinations. The infirmary, a department of the Massachusetts General Hospital, affords opportunity for practical instruction. The cost of tuition is $200 for the first year, $150 for the second, and $50 for any subsequent year. The degrees of Master of Arts, Doctor of Philosophy, and Doctor of Science, imply a post-graduate course of study, and are conferred upon examination only. The degree of A. M. was conferred in course without examination for the last time in 1872. The degree of Doctor of Science is open to Bachelors of Science or Philosophy, who are required to reside at least two years at the University and pursue, during three years, a course of scientific study, embracing at least two subjects, and pass an examination in the same. The other two degrees are open to Bachelors of Arts. Candidates for the degree of Master of Arts are required to pursue, for at least one year at the University, an approved course of liberal study, and pass an examination in the same. Candidates for the degree of Doctor of Philosophy are required to pursue, at the University for two years, a course of liberal study (and pass an examination in the same) in one of the following departments; namely, philology, philosophy, history, political science, mathematics, physics, natural history, or music. The degree of Master of Arts is also conferred upon candidates who pursue, at the University, at least one year after taking the degree of Bachelor of Laws, Bachelor of Divinity, or Doctor of Medicine in Harvard University, an approved course of study in law, theology, or medicine, and pass an examination in the same. Post-graduate courses of study have, accordingly, been established in the three professional schools, as well as in the College and Scientific School. The fees for these courses range from $50 to $150 per year, which, however, are remitted to needy and meritorious students. The examination fees, $30 for A. M. and $60 for each of the other two degrees, are not remitted. Six fellowships have been established, with an annual income of from $600 to $1000 each, to aid graduates of the University in pursuing a post-graduate course of liberal study. Summer courses of instruction, especially designed for teachers, are given in chemistry and mineralogy, botany, and geology. The first is given in Boylston Hall. The course in phenogamic botany is given at the Botanic Garden; that in cryptogamic botany, at some point on the sea-shore; and that in geology, at present, at Cumberland Gap, Ky., in connection with the state geological survey. The fee for the geological course is $50; for the others $25. In 1875, these courses were attended by 98 persons, as follows: chemistry 40; botany, 27; geology 31. Among those in chemistry and botany were women, who are excluded from the regular courses in the various departments of the University. In 1874, examinations for women were established, of two grades: (1) A general or preliminary examination for young women not less than 17 years of age, in English, French, physical geography, elementary botany or elementary physics, arithmetic, algebra through quadratic equations, plane geometry, history, and German, Latin, or Greek; (2) An advanced examination for young women, not less than 18 years old, who have passed the preceding, in one or more of the following departments: languages, natural science, mathematics, history, and philosophy. Certificates are granted to those who pass satisfactorily. The fee for the preliminary examination is $15; for the advanced, $10. Two preliminary and three advanced certificates were granted in 1875.—In 1875—6, besides 26 proctors, librarians, and other officers there were 128 teachers of various grades as follows:

Departments.	Professors	Assistant professors	Lecturers	Tutors	Instructors	Demonstrators and assistants	Total
College	18	13	—	10	3	—	44
Scientific School	8	4	—	2	4	6	24
Bussey Institution	2	4	—	—	4	3	13
Divinity School	6	—	—	—	—	—	6
Law School	4	1	—	—	—	—	5
Medical School	11	3	1	—	17	2	34
Dental School	4	4	1	—	2	3	14
Museum of Comparative Zoölogy	2	—	—	—	—	9	11
Observatory	—	—	—	—	—	2	2
Total, deducting repetitions	49	21	2	11	27	18	128

In the College, there are professorships of German; Christian morals; astronomy and mathematics; natural religion, moral philosophy, and civil polity; mathematics and natural philosophy; ancient, Byzantine, and modern Greek; ancient and modern history; anatomy; the French and Spanish languages and literatures; belles-lettres; rhetoric and oratory; Latin; the history of art; chemistry and mineralogy; political economy; Greek literature; modern languages; history; mathematics; and music. In the other departments of the University, besides those strictly professional, there are professorships of natural history; engineering; geology; elocution; entomology; the application of science to the useful arts; applied zoölogy; astronomy and geodesy; Hebrew and other oriental languages; zoölogy; agricultural chemistry; topographical engineering; and palæontology. The whole number of different students, in 1875—6, deducting repetitions, was 1,263, distributed as follows:

Departments.	Number.	Departments.	Number
Resident Graduates	54	Scientific School	34
College Students	776	Medical "	192
Divinity School	19	Dental "	33
Law "	161	Bussey Institution	5

Of the resident graduates, 35 were candidates for higher degrees, and 6, holders of fellowships; of the college under-graduates, 148 were seniors, 194 juniors, 182 sophomores, and 252 freshmen. The following degrees were conferred at the commencement in 1876: A. B., 136; S. B., 3; C. E., 4; D. M. D., 10; M. D., 36; LL. B., 49; D. B., 5; A. M., 7; Ph. D., 5; S. D., 1; according to the triennial catalogue of 1875, the whole number of *alumni* of the college was 8,741, of whom 3,298 were living; of bachelors and doctors of medicine, 2,128; doctors of dental medicine, 57; bachelors of laws, 1,857; bachelors of science, 196; *alumni* of the Divinity School, 439. The presidents of the University have been as follows: Henry Dunster, 1640—54; Charles Chauncy, 1654—72; Leonard Hoar, 1672—5; Uriah Oakes, 1675—81; John Rogers, 1682—4; Increase Mather, 1685—1701; Samuel Willard (vice-president), 1701—7; John Leverett, 1708—24; Benjamin Wadsworth, 1725—37; Edward Holyoke, 1737—69; Samuel Locke, 1770—73; Samuel Langdon, 1774—80; Joseph Willard, 1781—1804; Samuel Webber, 1806—10; John Thornton Kirkland, 1810—28; Josiah Quincy, 1829—45; Edward Everett, 1846—49; Jared Sparks, 1849—53; James Walker, 1853—60; Cornelius Conway Felton, 1860—62; Thomas Hill, 1862—68; and Charles William Eliot, the present incumbent, appointed in 1869.

HAÜY, Valentin, distinguished for his philanthropic efforts in behalf of the blind, and as the inventor of an apparatus for their instruction, was born at Saint-Just, in France, in 1745, and died in 1822. He was brother to the distinguished French mineralogist, Abbé (René Just) Haüy. His remarkable zeal and success in the cause to which he devoted his life, fully entitled him to the appellation conferred upon him in France, — the *Apostle of the Blind*. His interest was first excited in this cause by hearing a blind lady play on the piano before the French king, which circumstance led him to believe that the blind might be educated. Learning that she had instructed herself by means of raised notes and lines, and, moreover, that she had also made use of raised letters in her correspondence, he took so deep an interest in the matter that, in order to be able to study the subject experimentally, he became an instructor of blind persons. He taught them to read by means of carved letters, which could be moved, in the grooves of a board, and combined into words like type. The need of books led him to invent the raised print. His school was established in 1784, partly by means supplied by the Philanthropic Society of Paris; and, in 1786, he published an essay on the education of the blind, in which he explained his plan of instruction. The Academy in Paris declared it to be the best that had been proposed, and fully endorsed it. This led to the adoption of his institution by the government, in 1800: upon which he ceased to be its director, but received, as an acknowledgment of his services, a pension of 2000 francs. In 1806, he received, from the emperor Alexander, a call to St. Petersburg, where he founded a similar institution; but his labors were interrupted by the war which broke out, in 1812, between France and Russia, and he returned to Paris, where he spent the remainder of his life in retirement.—See *V. Haüy and the Instruction of the Blind*, in BARNARD'S *Journal of Education*. (See also BLIND, EDUCATION OF THE.)

HAVEN, Erastus Otis, an American clergyman and educator, born in Boston, Mass., Nov. 1., 1820. After graduating at Wesleyan University, Middletown, Ct., in 1842, he taught for some years in Amenia Seminary, New York; after which he entered the ministry of the Methodist Episcopal Church, and was pastor several years in New York. In 1853, he was appointed professor of Greek and Latin in the University of Michigan; but, in 1856, assumed the editorship of *Zion's Herald* in Boston, where he resided until 1863. During this period, he served as a member of the Massachusetts board of education; and, in other respects, took an active interest in education. In 1863, he became president of the University of Michigan, which under his administration greatly increased in numbers, resources, and efficiency. In 1869, he accepted the presidency of the North-western University, at Evanston, Ill.; and, in 1872, was elected first corresponding secretary of the Methodist Episcopal board of education. In June, 1874, he was appointed chancellor of the Syracuse University, in New York. His chief publications are *The Young Man Advised* (N.Y., 1855), *Pillars of Truth* (1860), and *Rhetoric, a Text-Book for Schools* (1869).

HAVERFORD COLLEGE, in Montgomery Co., Pa., 9 miles from Philadelphia, was founded in 1832, and is under the control of the Society of Friends. The name of the post-office is the same as that of the institution. It is supported by tuition fees, contributions, and an endowment fund of about $120,000. It has fine college buildings and grounds. The libraries contain about 11,000 volumes. It includes a full collegiate course and a scientific course. In 1874—5, there were 5 instructors and 49 students. The president of the college is Thomas Chase (1876).

HAWAIIAN ISLANDS, or Sandwich Islands, a group of islands in the Pacific ocean, forming an independent kingdom; area 7,629 sq. miles; population, in 1872, 56,877. Of these, 49,044 were natives; 889, Americans; 2,521, Europeans; 2,485, half-breeds; and 1,938, Chinese. The total Catholic population, in 1873, was about 23,000; the remainder were Protestants. The native race is rapidly dying out, having been estimated, in 1822, as high as 142,000. These islands were known to the Spaniards about a century before their discovery by Captain Cook, in 1778. Towards the close of the last century, they were united, by conquest, under one king, and have thus remained ever since. The first schools on these islands were established between the years 1823 and 1827, by the native chiefs, who, through the persuasive power of the American missionaries, were induced to place themselves under instruction. In the course of time, the accomplishment of reading became so popular, that the adherents of the chiefs were sent to every island of the group for the purpose of introducing it. The schools grew rapidly, being at one time 900 in number, with about 52,000 pupils, most of whom were adults. Besides reading and writing, arithmetic and geography were taught, of which two studies the Hawaiians are very fond. The instruction, however, was necessarily of a very primitive character. The American Board of Foreign Missions sustained, from 1830 to 1840, schools at each of their stations, intended as models for the native schools. When, in 1839, the French Roman Catholic mission had been firmly settled, it established its own schools, which, although not so numerous as the others, have always been prominent in the educational history of these islands. The first written constitution and laws were promulgated in 1840; and among the latter was one for the establishment of schools, which was amended in 1841. This law had for its model the school law of Massachusetts. In 1846, a minister of public instruction was appointed, which office was afterwards changed to that of president of the board of education. In 1865, a new school law was promulgated, which, with few changes, is in operation at the present time.

School System. — There is a board of education of five members, appointed by the king. The duties of the former minister of public instruction, which were transferred to the president of the board of education, are exercised by the inspector general. This official is appointed by the board, and is required to visit all the schools, to direct what studies are to be pursued, to grant certificates of qualification to teachers, and to revoke the same for proper cause. No clergyman of any denomination can hold this position. The board appoints a school agent in each of the twenty-five districts into which the islands are divided, who is the local executive officer of the board. The agent, the district judge, and an elective member, yearly balloted for by the parents of the district, together form a district school board. This board has the power to appoint and remove teachers, subject to an appeal to the board of education. The school sessions are held from 9 A. M. to 2 P. M., with two intermissions, one of 15 minutes and the other of 30 minutes. Every teacher is required to have a certificate of competency from the inspector general, and must attend the quarterly teachers' institutes, of which there are three in Hawaii, and one in each of the other islands. There is no normal school, but most of the teachers receive their education in the Lahainaluna seminary. The usual salary of teachers is 50 cents a day. The Hawaiian language is the only medium of instruction in the schools, in which tuition is free, with the exception of the Union school at Hilo, which is the first attempt at a graded school on the islands. English is taught in this school in the higher classes. All children between the ages of 6 and 14 are required to attend school. This law is enforced by fines and other penalties.

School Statistics.— The statistics for 1872 are as follows: Common schools, 202, with 3,574 boys and 2,700 girls; government boarding-schools 3, with 205 boys; government day schools 5, with 344 boys, and 148 girls; boarding-schools aided by the government, 9, with 170 boys and 197 girls; day schools aided by the government, 8, with 168 boys and 106 girls; independent boarding-schools 4, with 18 boys and 78 girls; and independent day schools 14, with 312 boys 267 girls; making a total of 245 schools, with 4,791 boys, and 3,496 girls; or, in all, 8,287 pupils. The Lahainaluna seminary, in Lahaina, is a college for native males. It was founded, in 1831, by the American mission; but is, at present, supported and controlled directly by the government. Like the American colleges, its course of study embraces a period of four years. It had, in 1872, 103 students. The Oahu college, near Honolulu, was founded in 1841, by American missionaries, for their own children, and was chartered in 1849. It is the principal institution for English-speaking youths of both sexes, and has, at present, 75 pupils. There are six female seminaries, with 358 pupils. These schools receive a small portion of their support from the government. — See LYONS, *Education in the Hawaiian Islands*, in *the Report of the U. S. Commissioner of Education*, 1872; NORDHOFF, *Northern California, Oregon, and the Sandwich Islands* (1874).

HAYTI, a Negro republic in the West Indies. Its area is about 9,232 square miles, and its population, about 572,000, of whom the great majority are of negro extraction. The prevailing religion is the Roman Catholic, but other sects are tolerated. The language of the country is French. The island of Hayti was discovered by Columbus on Dec. 5., 1492. The western part of this island was, in 1697, formally annexed by France; but the eastern part remained, for a long time, a dependency of Spain. (See SANTO DOMINGO.) In 1791, the negroes of Hayti rose against the French rule, and, after assassinating all the whites, proclaimed their independence in 1804. Under the French rule, nothing was done to educate the negroes. The constitutions of 1816 and 1846 contained educational provisions, which were never carried into effect. Private schools were established in a few places; but it was not until President Geffrard came into power, in 1859, that any thing was done by the government, to promote the cause of education. Under this president, the schools rapidly increased. According to the latest accounts, there are about 235 national schools, with about 15,000 pupils. Port-au-Prince has a school of navigation, a law school, a school of physicians and surgeons, a music school, with about 100 pupils, a drawing school, a school of arts and sciences, a lyceum, and a high school for girls. A high school for females was also founded by Geffrard at Cape Haytien.—See DELITSCH, *West-Indien und die Südpolarländer*.

HAZING, a term applied to the mischievous and often abusive and injurious tricks which are played by older college students upon freshmen. The term, as well as the practice, is of considerable age; but, during the last few years, much effort has been put forth by those who have the charge of higher institutions of learning to suppress the custom, as being shameful, barbarous, and utterly demoralizing to those participating in it. In the naval and military academies of the United States, this custom was, a short time ago, observed in the most revolting manner, often violating the rules of common decency, and sometimes inflicting severe bodily injuries. In 1871, a number of cadets at the West Point Academy were dismissed from the U. S. service for being engaged in acts of outrage of this character; and at the Naval Academy, at Annapolis, several midshipmen had their names dropped from the roll for what was designated "coarse, cruel, and oppressive conduct toward other members of the institution." In issuing the order, the Secretary of the Navy remarked, that "youthful vivacity and mischief" might sometimes be overlooked, but that "persistent blackguardism" could not be tolerated. In most of the better class of American colleges, this demoralizing practice has been partly or wholly suppressed; but nothing but severe and persistent measures, supported by strong public opinion, will banish it entirely. In mixed colleges, in which male and female students are instructed, it has almost wholly disappeared; and, as an illustration of the difference between male and female college students, the following account of the reception of new-comers at Vassar College is cited: "Upon a certain evening, a few days after the opening of the session, the members of the sophomore class receive their sisters who have just entered, with flowers, music, and a delightful, though inexpensive, entertainment". How much better this than the ruffianism of *hazing!*

HEART, Education of. See MORAL EDUCATION.

HEBREW LANGUAGE, the language in which the Sacred Scriptures of the Old Testament were written, is on that account of special importance both for the Hebrew people and for Christians, more especially theologians, who desire to read the Scriptures in the original. It is one of the Semitic languages, so called because chiefly spoken by nations mentioned in Scripture as among the descendants of Shem, and embracing, besides, the Arabic, Syriac, Chaldee, and Ethiopic as its principal branches. It is the only one among the Semitic languages which, in countries of the Indo-European world, is extensively studied; and thus always serves as the portal through which Indo-European students are introduced to an acquaintance with a family of languages different from their own. Its great antiquity is acknowledged on all sides; and theologians have often claimed for it an age coeval with the earliest history of mankind. After the captivity in Babylon, it gradually became mixed with Chaldee, by which it was finally supplanted as the national language. The knowledge of the Old Hebrew language was, however, preserved by the priests and scribes, who used it for literary and educational purposes. From the 2d to the 6th century of the Christian era, Hebrew literature shows an independent development; from the 8th to the 11th it was stationary and neglected; from the 11th century to the present time, a new Hebrew literary language, formed on the basis of the Old Hebrew, and enriched by many new formations, technical terms, particles, and foreign words, has been extensively used by learned Hebrews in all branches of literature.—The alphabet now used in the Old Testament Scriptures is supposed to have been introduced by or soon after Ezra. It is called by the Jewish doctors Assyrian, and is generally admitted to be of Aramean origin. Another alphabet, the rabbinical or mediæval, is chiefly used in Hebrew commentaries and in notes to the Old Testament; and a third alphabet, the cursive, is used in writing. A fierce controversy was carried on, for a long time, as to the origin and authority of the punctuation by which the vowel sounds are indicated. The learned Buxtorff believed that the vowel points are coeval with the Hebrew language, and apprehended from the opposite opinion, which was chiefly advocated by Cappel, the most dangerous consequences to the Christian religion. At present, the view of Cappel, that the vowel points were introduced about the 7th century of the Christian era, for the purpose of preserving as far as possible the true pronunciation of the language, is generally acquiesced in. Like all the Semitic languages, with the sole exception of Ethiopic, the Hebrew is read from right to left.

The scientific study of the Hebrew language did not begin, even among the Jews themselves, until about the 9th century. Among the Church Fathers, Origen and Jerome devoted themselves, with much zeal, to the study of Hebrew, and Jerome, especially, became proficient in all that his Jewish masters could teach him; but, from the entire literature of this period which has been left to us, it appears that both Jews and Christians had but an imperfect knowledge of the ancient Hebrew language. Toward the end of the 9th century, the Jews were stimulated by the example of the Arabians to bestow careful study upon ancient Hebrew; but, unlike the Arabians, they compared in their studies the whole of the Semitic languages. Among the many who distinguished themselves by writing grammatical or lexicographical works, the most noted are Saadia Gaon (died 942), Jehuda Chajug (about 1050), Abraham ben-Esra (about 1150), and David Kimchi (about 1190 to 1200). Among the Christians, the Hebrew language was studied only to a limited extent during the middle ages; although Pope Clement V., at the Council of Vienna, held in 1311, ordered the appointment at each university, of six professors of the Hebrew, Chaldee, and Arabic languages. The revival of classical studies, in the 15th century, gave an impulse also to the study of Hebrew; and Wessel, Picus of Mirandola, and Agricola are mentioned among those who promoted the study of Hebrew, which was especially cultivated at the university of Tübingen. The real founder of a scientific study of Hebrew at the European high schools was Reuchlin, whose grammar and lexicon appeared in 1506, and closely followed the methods and traditions of the Jewish grammarians. Luther and Melanchthon strongly recommended the study of Hebrew to the Protestant theologians; and several Protestant states of Germany, accordingly, received it into the course of instruction of the learned institutions, though generally as an optional study. In the Roman Catholic Church, the principal works were the grammar (1526) and dictionary (1529) of Santes Pagnini, a Dominican; and, somewhat later (1578), a greatly improved grammar by the Jesuit Bellarmin, who was professor of Hebrew at the university of Louvain. In the Protestant schools, the grammars and lexicons of the older Buxtorff were, for many years, the principal aids to the study of Hebrew. A new school of Hebrew philology arose under the leading of Alting and Danz, in the second half of the 17th century, which endeavored to show that the phenomena which the Hebrew exhibited, in a grammatical point of view,—the inflections, etc., had their basis in the essential properties of the language, and could be rationally evolved from definite principles. Great advancement was made, in the beginning of the 18th century, by the almost simultaneous rise of the two rival schools of Schultens, in Holland, and Michaelis, in Germany. In the former, the predominating tendency was toward the almost exclusive use of the Arabic for the illustration of Hebrew grammar and lexicography. To this school belong Schröder, professor at Groningen, and Robertson, professor at Edinburgh (*Grammatica Heb.*, 2d edit., 1783). The principle adopted by the school founded by the Michaelis family, was to combine the use of all the sources of elucidation for the Hebrew, the cognate dialects, especially the Aramaic, the versions, the rabbinical writings, etymology, and the Hebrew itself, as exhibited in the sacred writings. From this school, to which the majority of recent German Hebraists belong, proceeded Gesenius, whose grammars (*Lehrgebäude*, 2 vols., 1817; *Grammatik*, 1813; 21st ed., 1872), reader (1814, 11th ed., 1873), and dictionaries (*Handwörterbuch*, 1810—12; 7th ed., 1868; Latin transl., 2d ed., 1846, English trans. by Edward Robinson and by Tregelles; *Thesaurus*, 3 vols., 1829—58) have been more extensively used than any other works of the same kind. His grammar was translated into English by Moses Stuart (1826) and by Conant (1839); his shorter dictionary, by Gibbs (1824), and Robinson (1836); and both have been extensively used in American schools. The greatest rival of Gesenius for the headship in Hebrew philology is Ewald (*Kritische Grammatik*, 1827, 8th ed., 1870; *Sprachlehre für Anfänger*, 4th ed., 1875), who, starting from the principles first developed by Alting and Danz, treated the Hebrew language as an organic whole, according to historico-genetical principles, making at the same time a very extensive use of the cognate dialects. Among the numerous other Hebrew grammars published in Germany, those by Hupfeld (*Grammatik*, 1841) and Nägelsbach (*Grammatik*, 3d ed., 1870) are highly valued. In England and in the United States, grammars have, among others, been published by Lee (3d ed., 1844), Greene, and Jones. Of the numerous Jewish scholars who have written grammatical and lexicographical works on the Hebrew language, none is valued so highly as Fürst (*Handwörterbuch*, 2 vols., 1857), who illustrates the Hebrew not only from cognate tongues, but also from those of the Indo-Germanic class, and endeavors, on philosophic grounds, to separate the accidental from the essential, the radical from the ramified, the root from the stem, the stem from the branches, so as to arrive at the laws which actually rule the language. Among the Hebrew grammars published in England and in the United States by Jewish scholars, are those by Horwitz (London, 1835), Nordheimer (2 vols., New York, 1838—42), Kalish (London, 1863), Mayer, and Felsenthal (Chicago, 1875).

As the study of Hebrew, among Christians, generally is not begun until the students have obtained a good knowledge, not only of their native tongue, but also of Latin and Greek, the teacher will find it expedient to pursue a method very different from that observed in teaching young pupils the elements of Latin and Greek. The mastering of the chief rules of grammar may be expected to consume comparatively little time. As the chief purpose of nearly all students of Hebrew is to be enabled to read the Bible, it is natural that teachers should generally conform their method to that special aim. The study of the Hebrew Bible is, therefore, begun as soon as possible, and most of the grammatical peculiarities are explained in connection with reading. Translations from the native tongue are rarely made; though many scholars strongly recommend them, on the ground that every foreign language, to be completely understood, requires exercises in written composition. In most Christian countries, the study of Hebrew is optional for Christian theologians. In Germany, the state governments demand of all the Protestant as well as Catholic theologians a knowledge of this language; and it is included in the subjects in which all the theologians of those churches have to pass an examination. To that end, the course of instruction in the gymnasia embraces, for the higher classes, the study of Hebrew; and the lectures given in the theological faculties of the universities and in the theological seminaries, explain the Hebrew text no less than the theological meaning. The study of the Hebrew language is of special interest to the Jews, whose total number is estimated at from six to seven millions. As the reading of the Hebrew scriptures is a prominent part of religious worship, the study of the Hebrew language is not only obligatory for all rabbis and *readers*, but is generally pursued in all Jewish schools. (See HEBREWS, EDUCATION AMONG THE.) The history of the Hebrew language has been written by GESENIUS (*Geschichte der hebräischen Sprache*, (1815); and by RENAN (*Histoire et système des langues sémitiques*, 4th ed., 1864). The method of teaching Hebrew is treated of in Klingenstein, *Der Unterricht im Hebräischen* (1861). The complete literature relating to the Hebrew language up to 1850 is found in Steinschneider, *Bibliographisches Handbuch für hebräische Sprachkunde* (1859).

HEBREWS, Education among the. This subject will be treated under the following heads: (I) Ancient Hebrews; (II) Hebrew education in the middle ages; (III) In modern times.

I. *Ancient Hebrews.*—Notwithstanding the accessibility and abundance of the earliest records of the life and labors of the Hebrews, scarcely any thing is known of their educational status until after the termination of Biblical history. From the sacred records we simply learn that the Law made it the duty of parents to teach their children its precepts and principles. — During the Egyptian bondage, the Hebrews probably enjoyed some educational advantages, but to what extent it does not clearly appear from the records. Moses himself had been carefully trained, and was competent not only to lead but also to instruct the people of God, during their wanderings in the wilderness. At that time, the Hebrews must have been more or less subject to mental as well as to religious training. They must have been able to read and write; for they were commanded of God to *write* the precepts of the Law upon their doorposts and gates; and they were, moreover, required to write the injunctions upon great stones "very plainly", immediately upon crossing the Jordan, so that they might easily be *read* by every Israelite.

The end and aim of all mental training among the ancient Hebrews, up to the Babylonish captivity, was to develop most prominently the religious tendency, in the child, in order to rear obedient servants of the true *Elohim*. Being a peculiar people — the only theocratic people of antiquity — engaged almost exclusively in pastoral and agricultural pursuits, their system of education aimed to secure the energetic assertion of a nationality whose essence consisted in the principle of faithfulness to the covenant of God. Hebrew education, therefore, was, previous to the captivity, nothing more nor less than a corollary of religion; and teaching was necessarily, in the main, if not altogether, religious. It involved instruction in the Law, the customs, and the symbolical observances of the nation, as well as the narration of its history in illustration of these subjects. We should bear in mind, moreover, that the understanding of the sacred oracles was not the peculiar prerogative of the priestly order, but was enjoined upon every Israelite. This makes it self-evident that the knowledge of reading and writing must have formed a prominent part in the education of all children. For the same reason, too, arithmetic must have been taught; as the days of the week, the months, the festivals, etc., were not designated by proper names, but by numerals. In fact, every art or science which is alluded to in the Old Testament, and upon a knowledge of which depended the understanding of the Scriptures, must, to some extent, have formed a part of the strictly religious Jewish education. Now, when we consider that the education of the Hebrew children depended upon the parents, it becomes self-evident that the Hebrews must have been, while residents of Canaan, a universally educated people.

Of course, so long as the education of the child devolved upon the parent, there could not very well have been much room for *schools*. There are, however, cases on record (previous to the Babylonish captivity) in which professional *teachers* were resorted to. This was probably the case when parents found themselves incapacitated or too much engaged otherwise. Thus David tells us that he had many teachers. In the days of the Judges we read of a *Kirjath-sepher*, the "city of books", a name which seems to indicate the seat of some scholastic establishment that had been founded by the Canaanites. But to what extent the people availed themselves of such helps we do not know. In the days of Samuel, again, and down through the prophetical age, there are indications of collegiate settlements in several parts of the country, as Bethel, Jericho, Gilgal, Rama, and Mt. Carmel, where the students, under the name of *b'ney hannebiim* "sons of the prophets" lived a kind of monastic or rather Pythagorean life (not as celibates), in great numbers and at common cost, and where the severer study of the theocratic laws and institutions was accompanied with that of poetry and music. But these schools of the prophets fell into decay a long time before the captivity.

During the Exile, the Hebrews became very neglectful of the education of their children. The Law was not so carefully observed as in Canaan, their vernacular language was to a great extent forgotten, and there was even much amalgamation with the heathen nations. Yet the Babylonish residence was not without its benefits. The intercourse with the Chaldean people enlarged the Hebrew's field of knowledge, and gave to superior intellectual capacity a stimulus for its speculative exercise. The wonderful development of their Babylonish schools for centuries proves that they, even then, enjoyed that remarkable fertility of resource that has preserved the Hebrews to our day a peculiar people, though riven and broken, and scattered in every clime. — With the restoration of the Hebrews to their own country, a brilliant page opens in their intellectual history. True, when Ezra, the priest, first came to Jerusalem to re-establish Mosaism in all its former glory, he did not find as many competent for the task of instructing the youth, as there had been previous to the captivity, but he found enough of highly cultured Hebrews to form the nucleus of a college. By the co-operation of the most enlightened and learned of the Hebrews, he formed a synod, or rather a college, commonly called the Great Synagogue (*keneseth haggedolah*) composed altogether, it is said, of one hundred and twenty; and, wisely organized these scholars into a distinct order.

continued, in a succession of about as many years, the work of public instruction in Jerusalem. From this capital, teachers were sent throughout the country of Palestine; and all Israel again enjoyed the training it had been accustomed to before the Exile, only with manifold improvements, obtained by the contact of their wise men with foreign nations. Not merely was the study of the Law re-established, but the study of other languages besides the Hebrew was introduced, and, in consequence, the critical examination of other religious systems, as well as of philosophical speculation. It need not then be a matter of surprise that the Hebrews soon came to be noted as scholars, that, in 260 B. C., Ptolemy Philadelphus paid seventy Jewish scribes 2,500,000 dollars for the septuagint version of the Bible, prepared by them at Alexandria at his request, or that the greatest light of neoplatonic philosophy was none other than Philo "the Jew" (A. D. 20). — After the extinction of the Great Synagogue, its place was supplied by the *sanhedrim*, the president of that body, who was called "prince" (*nasi*) and became the supreme arbiter and authority in the whole sphere of morals and education, exercising a rectoral office in the scholastic institutions of the land. Besides, many of the members of the Great Council actively engaged in the work of instruction itself. One of the brightest lights in the history of ancient Hebrew pedagogy is Simon ben Shetach, who took a wider range of thought and speculation than any of his predecessors. He introduced high schools in many places and did much to elevate the standard of Hebrew scholarship. He lived about 80 B. C. At that time, schools flourished throughout the length and breadth of Palestine, and education had been made compulsory. Every Judean town containing a certain number of inhabitants was bound to maintain a primary school, the *chazan*, or *reader* of the synagogue, usually being the teacher. Schools of a higher grade were presided over by the rabbins, and a certain portion of the public revenue was set apart for the support of these institutions. While there is not a single term for *school* to be found before the Exile, we now meet with about a dozen in common use. The etymologies of some of these words, and the signification of others, give us, in a very striking manner, the progressive history of Jewish education, and tell us that foreign elements had largely and favorably impressed Hebrew pedagogy. Some idea may be formed of the paramount importance which public instruction had assumed, in the life of the nation, from the innumerable popular sayings of the period: — "Jerusalem was destroyed because the instruction of the young was neglected." "The world is only saved by the breath of the school children." "Even for the rebuilding of the Temple the schools must not be interrupted." "Study is more meritorious than sacrifice." "A scholar is greater than a prophet." "You should revere the teacher even more than your father. The latter only brought you into this world, the former indicates the way into the next. But blessed is the son who has learnt from his father: he shall revere him both as his father and as his master; and blessed is the father who has instructed his son." — The character of the schools may be best inferred from the laws by which their founding and management were controlled. For elementary instruction a school or teacher was required for every 25 children; when a community had 40 children, they might have one master and an assistant. Schools could not be established in the most densely crowded part of the town, nor near a river which had to be crossed by an insecure bridge, so as to endanger the health or lives of the children. The proper school age for a boy was six years, until then the father being his instructor. Great care was taken in the selection of text-books, and that the lessons taught were in harmony with the capacity and inclination of the child, were practical, few at a time but weighty. "The parents must never cease to watch that their children are in school at the proper time."

When the power of the Hebrews was broken anew at Jerusalem, and their temple again destroyed, the sense of their common danger, misery, and want bound them only more closely to one another. No sooner had the war terminated than, in place of the temple, the synagogue appeared, and what at first the priest had guided, the rabbi now controlled. The dispersion of the Hebrews and the destruction of the temple and school at Jerusalem, therefore, did not long interfere with their enjoyment of that peculiar nationality which they have now maintained for nearly seventeen centuries. A citizen of the world, having no country he could call his own, the Hebrew, nevertheless, lived within certain well-defined limits, beyond which, to him, there was no world. Thus, though scattered abroad, the Israelites had not ceased to be a nation; nor did any nation feel its oneness and integrity so truly as they. Jerusalem, indeed, had ceased to be their capital; but the school and the synagogue, and not a Levitical hierarchy, now became their impregnable citadel, and the Law their palladium. The old men, schooled in sorrows, rallied the manhood that remained, and the infancy that multiplied, resolving that they would transmit a knowledge of their mission to future generations. They founded schools as well as synagogues, and developed a grade of scholarship the ability of which is attested by the writing of a code of laws only second to that of Moses—a system of traditionary principles, precepts, and customs, intended to keep alive forever the peculiar spirit of Judaism. The high school destroyed at the holy city, was supplanted by the college at Tiberias; and that place, changed into a kind of Jerusalem, where instead of building in wood and stone, they employed workmen in rearing another edifice, which, even to this day, continues to proclaim the greatness of the people after their dispersion. This was the *Mishna* and the *Gemara*, better known as the *Babylonian Talmud*, the so-called Oral Law reduced to writing, arranged, commented upon, and explained; until it became, in the course of a few centuries, a complete digest of the law, the religion, and the nationality of the Jews. The greatest completeness was given to their means of public instruction by the establishment, in many places, of high schools like that at Tiberias. And not only was this done in Palestine and Babylon, but in all countries where the Jew had found an asylum. Thus, the college at Alexandria, in Egypt, became as celebrated as the colleges at Sora, Pumbadita, and Nahardea. The most noted schools of this period were, besides those just mentioned, the colleges at Akbara, Bethira, Cæsarea, Chammatha, Lydda, Jabneh, Magdala, Machuza, Nares, Sepphoris, Selki, Shaken-Zib, and Ushach.—At first, the organization of these high schools was very simple. Besides the president, who was the chief teacher, and an assistant, there were no offices or ranks. Gradually, however, superior and subordinate ranks were established. The president or rector, who was elected by the students from the rank of professors, was called *resh methibtha*. Next in rank stood the *resh kalla*, or "dean," the *chief of the assembly*, whose office it was to expound or simplify to the students, for the first three weeks of the session, the theme of the rector's forthcoming lectures; and so arduous became the task, as the number of disciples increased, that, in time, no less than seven "deans" had to be appointed. Their colleagues, or the graduates who were eligible to that dignity, were called *chaberim* (companions), and corresponded somewhat to the English "fellows." The mode of instruction was chiefly catechetical. After the *resh* had delivered his exposition, for which the "dean" had prepared the students, and the *chaberim* had followed with their comments, the disciples questioned the teachers. Now all became life, movement, and debate; question was met by counter-question, answers were given wrapped up in allegories or parables, until the inquirer was brought to deduce the questionable point for himself by analogy, when a memorandum was made of the conclusions reached. The curriculum of study was quite varied, as much so as in any modern university. All manner of subjects were brought forward in these Hebrew colleges. Theology, philosophy, jurisprudence, astronomy, astrology, medicine, botany, geography, arithmetic, architecture, were all themes which alternately occupied the attention of masters and disciples. In fact, the Talmud, which is the repository of these discussions, is nothing less than an encyclopædia of all the sciences of that time, and shows that, in many departments of science, these Jewish teachers anticipated some of the modern discoveries. See HAMBURGER, *Real-Encyklopädie für Bibel und Talmud* (Hamb., 1866—74). The principal subjects of study were, of course, Biblical, including hermeneutics, or scripture interpretation; *halaka*, or the constitutions of the traditional law; popular ethics, legendary history, sacred poetry, and the science of the calendar. Etiquette received very great attention, as it was regarded by the Hebrew sages an essential part of education. The most minute directions were given as to the behavior of students toward their parents, their teachers, their superiors in age or rank. Perhaps the strangest feature of Hebrew education was the training of every student in some trade. Consequently, most Hebrew "doctors" were but humble mechanics. They were tent-makers, sandal-makers, weavers, carpenters, tanners, bakers, cooks. Piety and learning only received their proper estimation when they where joined to healthy bodily work. One of the greatest Hebrew sages, Rabbi Gamaliel, declares, "learning, no matter of what kind, if unaccompanied by a trade, ends in nothing, and leads to sin."—The high schools had two sessions in the year: the summer *semester* beginning with *nisan* (new moon of April), and ending with *elul* (new moon of September); and the winter *semester*, beginning with *tishri* (new moon of October), and ending with *adar* (new moon of March). In the concluding month of each half year, the studies of the session were reviewed. On these occasions, there were academic disputations which created extensive interest, and were attended by thousands of hearers. The academical degree of *chaber* was conferred by the *resh*, who laid his hand on the head of the candidate, with the words, "Be thou *chaber*!" As such he was entitled to a seat in the schools as commentator and judge on questions in dispute, his opinion possessing a certain value or authority. He then also dropped his simple personal name, and took the briefer but more honorable designation of "the son of" (*ben*); *e. g.*, Joshua, the son of Bethira, called himself *Ben Bethira*. The higher degree was that of *rab* or *rabbi*; in Babylon, *mar*. It was given in the same form as the *chaber*, with the bestowment of a key, symbolizing that there was now conveyed to the recipient a power of opening the law by authoritative exposition, and of locking up or releasing the consciences of men. Unmarried men and women were not allowed to be teachers of boys.—As to girls, we have but little account in Scripture regarding their educational advantages. Needle-work formed the chief, but by no means the only, subject of instruction imparted to females. The 31st chapter of *Proverbs* is, probably, a pretty full description of what was the education of a woman and house-wife in the Old Testament period among the Hebrews; but, aside from this, the fact that mothers had to take part in the education of their children, would of itself show that their education must have been attended to. It is certainly clear that the prophetical schools included within their scope the instruction of females, who were occasionally invested with authority similar to that of the prophets themselves. It will be remembered also, that, in contradistinction to other oriental people, many female poets and learned women figure in the history of the ancient Jews.

II. The establishment of the Mohammedan power opens a new epoch in Hebrew education.

The severe treatment of the Romans had been superseded by a milder government at the hand of the Abbassides; but the Hebrew found considerate masters first in the Mohammedan rulers from Arabia. For centuries, the external condition of the Hebrews, under the eastern caliphate, was undisturbed by any great vicissitudes; and, from the 7th to the 11th century, their schools reached the height of prosperity. Thousands of students repaired to those fountains of instruction, not a few of whom came from distant parts of Europe and Africa, to carry back the means of promoting the cause of education in their adopted countries. In the 11th century, however, a less tolerant spirit ruled the eastern caliphates; and, in consequence, we meet with a decline in literature, which, had it not been for the humane policy of the western or white caliphates, would have resulted in an entire suspension of literary activity among the Jews. So far was the intolerance of the eastern caliphs carried, that, by the middle of the 11th century, the schools of Palestine and Babylon were shorn of all their ancient splendor, and Spain alone stood as the world's representative of Hebrew scholarship. In the Iberian peninsula, the Hebrew had had representatives from time immemorial; but, up to the close of the 10th century, the Jews there, though numerous and wealthy, were greatly behind their eastern brethren in intellectual development. No schools of any account are met with among them until the intolerance of the Eastern caliphs drove over to Spain some of the most renowned Hebrew scholars the East could then boast of. It was thus that Hebrew science received so decisive an impulse in the peninsula as to inaugurate a new era in Jewish intellectual progress. Indeed, the period from the opening of the 11th to the close of the 15th century, may well be denominated the golden period of mediæval Hebrew learning. The same spirit of broad tolerance which had prevailed for over three centuries in the East, now marked the rule of the "white" or western caliphs. Schools, colleges, and libraries were multiplied in the great centers of the population. The learned of other countries were invited to take positions munificently endowed, and ere long the universities of Spain became the resort of students from the East and the West. Among both students and teachers, the Jews counted largely; and the fountains of knowledge which sent forth their streams from the Arabian universities of Cordova and Toledo, were fed by Jews as freely as by Christians and Saracens. (See ARABIAN SCHOOLS.)

Besides freely entering the common as well as literary walks of life, and contesting with the other religionists the different avenues thus liberally opened to them, the Jews maintained a school system very much akin to that of the eastern countries in the preceding period. They not only sought to influence the training of their children in the earliest youth, but founded many collegiate establishments of their own, where a liberal education could be prosecuted by Hebrew young men and women under rabbinical influence. Such schools arose in Aragon, Castile, Catalonia, and Navarre, and in the towns of Barcelona, Alcala, Burgos, Cordova, Saragossa, Toledo, Tarazona, and Lucena. In these institutions, under the care of some of the most eminent scholars of the age, a multitude of men were trained whose works have been ever held in estimation not only by Israelites, but by the learned of the Christian world as well. (See TICKNOR, *History of Spanish Literature*, 3d ed., vol. I.) The principal of each college bore the title of *nagid* or *prince*, equivalent to that of *resh methibtha* in the eastern schools. Of course, rabbinical learning was made the basis of other forms of instruction. The Hebrew professors of these schools very naturally wished the minds of their students to be preoccupied with their own national doctrines and traditions. Thus a *nagid*, Salomo ibn Adrath, went so far as to enact that "gentile" philosophy should not be studied till the age of 24 years. (It should be added, however, that this proposition divided Hebrew scholars, and gave rise to a troublesome controversy.) There was a tendency in the Spanish-Hebrew youth to forsake the distinctively Jewish schools, and to avail themselves of the greater benefits of the more extensive educational movements which were displaying themselves around them. The rabbins, of course, saw, or thought they saw, imminent danger to Judaism, or rather to rabbinism; and hence their activity in educational movements. On the whole, this fear, though, as it now appears, ungrounded, was productive of much good to Hebrew learning; for it stimulated to a healthy exertion, and resulted in perfecting Judaism in Spain and in Portugal, until it rivaled that uprooted in the East. To facilitate talmudical studies, the works of Hebrew tradition were translated into the then vernacular Arabic; and thus the rabbinical institutes acquired a status in modern literature. The critical study of the Hebrew was encouraged, and a system of Hebrew grammar developed which maintains its hold to this day. Besides, the use of the Hebrew in composition and the enlargement of the Hebrew ritual were encouraged, and thus a large number of students, in the western peninsula, learned to write as freely the Hebrew, as their forefathers had written it in Jerusalem's most glorious day. In all these ways, the Hebrew sages domiciled in Spain and Portugal cherished national and ancestral feelings in the minds of the rising generation. The result of all this labor was a vigorous religious life in the social condition of the people, and an age of literary activity such as had not been known in Hebrew literature since the dispersion. Numbers of eminent Hebrew scholars, theologians, poets, linguists, and physicians were brought into general public notice; and, besides, many works were composed, treating of every species of science, including law, medicine, astronomy, language, and the fine arts. In philology, rose David Kimchi; in philosophy, Moses Maimonides, of whom it is said by some that he has only been excelled in wisdom and learning by Moses the prophet; in poetry, Jehuda ben Levi, pronounced by some the rival of king Solomon; in astronomy, Aben Ezra and Ibn Tibbon. But these are only a few lights in the much-illuminated firmament. In philosophy and astronomy, the Hebrew sages of that day excelled the Mohammedans.—See GUEDEMANN, *Das jüdische Unterrichtswesen während der spanisch-arab. Periode* (Vienna, 1873); ZUNZ, *Literaturgeschichte der synagogalen Poesie* (Berlin, 1865); KAYSERLING, *Geschichte der Juden in Spanien und Portugal;* LINDO, *History of the Jews of Spain and Portugal.*

Hebrew learning and institutions of learning, however, flourished thus not only in the Iberian peninsula, but in many parts of the continent also, especially in France and Italy, where a humane policy prevailed for centuries. In the former country, colleges flourished at Montpellier, Narbonne, Lunel, and Marseilles, besides many schools of inferior grade, all of which were conducted after the Spanish model. In Italy, the colleges at Mantua, Lucca, Otranto, and Bari not only enjoyed considerable reputation, but had the support of princes and of the pontiff at Rome. In the eternal city, the Hebrews supported an academy which boasts as its presidents the most renowned literati of the middle ages. One of them, Nathan ben Jechiel, who presided about the close of the 11th century, is said *peritus omnis generis scientiarum fuisse.*

III. The general spirit of persecution which prevailed against the Jews in Europe, from the 13th to the 17th century, largely stifled their literary activity; and the educational history of that period is very meager. When the religious zeal of Isabella and the covetous heart of Ferdinand closed the doors of Spain against all Hebrews who decided to remain faithful to the dictates of their conscience, many Israelites went to Holland, Germany, and Poland, and there established schools, which flourished for centuries. But these schools were almost exclusively devoted to talmudic study. No such system as prevailed in Spain and on the continent previous to the persecutions by the Inquisition, has ever been re-introduced; nor could such a system have been maintained previous to the present century. The baneful spirit of those dark ages had closed the doors of the schools, common or academic, against the Jew; and thus the liberal professions being made inaccessible to him, he could not well develop the scholarship of which his forefathers had boasted. But as the Hebrews labored for centuries under such disadvantages, and yet maintained among themselves a high moral culture, and did not sink into that state of degradation and crime which would have probably been the lot of other nations, a high estimate must be placed upon the culture and accomplishments resulting from the spirit of Mosaism; and it might as well be confessed that the theocratic institutions of the Hebrews and the foundation of their politics and ethics on their religion has produced a better culture, mental and moral, in literature, than that of any other non-Christian people. Their ancient education was far in advance of the Chinese and the Hindoos; for, in every lesson taught the Hebrew youth, were inculcated the sublimest virtues, among which may be enumerated charity, gratitude, obedience and respect to the commands of parents, politeness and cleanliness, all coupled with extreme reverence for the Almighty. In short, the aim of Hebrew education seems to have been the moral perfection of the individual, as well as the welfare of society.—From the establishment of the American republic, the modern Jew dates his liberation from bondage, not only in this country but all over the continent of Europe. His enjoyment of freedom was not instantaneous in all these countries, but the dawn of the new epoch began with the advance of republican principles in America and in France. In Germany, where, of all the enlightened countries, the Jew had to wait longest for his emancipation, the close of the last century is particularly noted for his literary advance. Both Moses Mendelssohn, the philosopher, and Hartwig Wessely, the philologist, deserve to be named as the founders of the first Hebrew free school at the Prussian capital (1778). Indeed, the latter scholar was really the ablest advocate of the modern method of education among the Hebrews. Thus, he not only exerted himself at Berlin, but also at Vienna, and elsewhere in the Austrian dominions, to prevent all opposition to the legislative recognition of the equality of the Jews with the Christians and their rights to admission to the state schools. After these, David Friedländer, a pupil of Mendelssohn, exerted himself for the further improvement of the Hebrew schools. Wherever, in Germany or Poland, he heard of schools barbarously deficient in the elements of useful secular knowledge, he labored for the introduction of the progressive system. Another noted philanthropist of the period is Israel Jacobson (born in 1768, died in 1828), who expended his large fortune for the education of his co-religionists. At Seesen, he founded, in 1801, a school at an expense of 100,000 thalers; and later, he labored at Cassel and in Berlin in the same direction. In more recent times, the German scholar, Leopold Zunz, still living, figures as the ablest and most successful advocate of Hebrew culture. Next to him in rank, Abraham Geiger of Prussia, and S. L. Rappaport of Galicia, in Austria, deserve a place. In Italy S. D. Luzzato has done more in this direction than all his contemporaries. In France, the place of honor belongs to Salomon Munk and J. Salvador. — There are, at the present time, good schools, both public and private, pretty widely distributed in Germany, Austria, Denmark, France, and even in Russia and Poland, where efficient elementary instruction is afforded to Hebrew children. Usually, these schools are under the care of the state, and supported in part by it, and in part by the forced contributions of the Hebrews who reside where the schools are located. In some of the larger cities where many Jews reside, the Hebrew schools provide separate training for the sexes, those for girls giving special attention to needle-work and other female accomplishments; those for boys giving sufficient classical training to admit them to the 5th or 6th year's course of the gymnasia, where the course extends over a period of ten years. Since 1873, the German government has also supported several Hebrew theological chairs at the Berlin university, and afforded aid to a "seminary" (normal school) for the training of teachers to be employed solely in schools for Hebrews. The Hebrew normal schools at Berlin and Breslau are regarded as among the best institutions of the kind in Germany. Hundreds of teachers are annually trained there. The Hebrews also support two greatly noted seminaries for theological training; the one (founded in 1847), at Breslau, Prussia; the other (founded in 1828), at Padua, Italy. At the Berlin university, Hebrew students in theology enjoy (since 1874) not only the training of their co-religionists but of all the professors employed in that institution.—In England, much has been done, in recent times, for the education of poor Hebrews, who are mostly of foreign birth. In the country, the schools maintained by Hebrews are intended simply for religious instruction. In London, a number of Hebrew private schools exist, and several for the education of poor children. The most noted of these institutions is the Jews' Infant School, where the gutter children of Spitalfields and Whitechapel, from the age of 2 to 7, are taught to speak, read, and write in English, and to recite their Hebrew prayers, in addition to other elementary instruction. From 750 to 1000 children now find admission there. The government has the supervision; and it is pronounced by the Earl of Carlisle " one of the finest schools in England." The Free School, in the same city, is of a more advanced grade. It admits those who desire instruction after leaving the Infant School. This Free School is pronounced the largest scholastic institution in England, if not in Europe. About 2,500 children are here instructed, the sexes separately; the branches in the higher classes being beyond the range of elementary study. The teaching staff is made up of 90 masters and mistresses. This school also is under government inspection, and is supported mainly by voluntary contributions. It has received several munificent legacies, amounting thus far to over £50,000. Another noteworthy Hebrew school is the London Jews' College, founded to afford good education at a moderate charge to the children of the middle classes. Many of its pupils are trained for university degrees and in some instances for the Jewish ministry. There is also a society called The Jewish Association for the Diffusion of Religious Knowledge which supports schools and synagogues, and circulates publications, aiming, in all these ways, " to impress upon the Jewish mind proper notions of the principles and observances, the spirit and mission of Judaism, and, by appeals to the reason rather than to sentiment, to develop and foster a most fervent conviction of the truths of their religion. But notwithstanding these institutions, it is claimed for London that it is probably the only city in which illiterate Hebrews reside. But for the degraded condition in which the very poor Hebrews in this city exist, it might safely be asserted that the Hebrews every-where are educated; and that, though belonging to all nationalities, and scattered promiscuously all over the face of the earth, no Israelites can be found who cannot read or write, if not in the domiciliary language, certainly in the Hebrew.—In the United States, the Jews have always occupied a most honorable position. Recognizing the value of the political and social fabric of that country, they have not only maintained institutions for the training of their children, but have supported education in the public schools. Sunday-schools are now maintained in the cities for the religious training of Hebrew youth; and where no such facilities are provided, the rabbi or *chazan* (public reader of the synagogue) usually assumes the task. At Philadelphia, where there are several distinctively Hebrew schools for general mental training, the Maimonides College was founded, in 1868; and, for a few years, it struggled in vain to secure students, though its facilities were superior, and the president one of the ablest educators and scholars in the country. In 1872, a movement was set on foot for the union of all American Israelites; and, supported principally by congregations in the Western States as a Union of American Hebrew Congregations, a college was started, in 1875, with Dr. I. M. Wise as president. There are reported to be 17 students in the institution, which is located at Cincinnati, Ohio. Thus far, the instruction is confined to the Hebrew language and literature. In May, 1876, the congregation of New York, supported by many of the congregations in Philadelphia, Baltimore, Chicago, and other cities, held a convention in New York, and determined to found a Hebrew Theological Seminary, for the education of Hebrew preachers and teachers first, and for general culture afterwards. The opening of this high school will probably be preceded by the founding of schools for instruction in the rudiments of the Hebrew language and in Jewish history.—See Grætz, *Geschichte der Juden*, vol. III.—XI.; Jost, *Geschichte des Judenthums;* Beer, *Skizzen einer Geschichte der Erziehung und des Unterrichts bei den Israeliten* (1832)*;* Ethridge, *History of Hebrew Literature* (revised and enlarged by Worman and Pick, N. Y., 1876); Weber and Holtzmann, *Geschichte der Israeliten;* Salvador, *Histoire des institutions de Moïse et du Peuple hébreu* (1828); Schmidt, *Geschichte der Pädagogik*, I., 451; Kitto, *Biblical Cyclopædia*, art. *Hebrews;* J. H. Worman, *Jews*, in McClintock and Strong's *Cyclopædia of Bibl. Theol. and Eccles. Literature.*

HECKER, Johann Julius, an eminent German educator of the 18th century, died June 24., 1768. He was one of the foremost followers of A. H. Francke (q. v.), with whom he became acquainted while studying at the university of Halle. He was appointed, in 1735, inspector of the orphan house at Potsdam, and, in 1739, pastor of the church of the Trinity, in Berlin; and, at the same time, became instructor of the German schools belonging to the parish. He at once displayed the greatest zeal to increase the number of the schools. In May, 1739, the first of his schools was opened with six teachers; and a number of free schools followed in rapid succession, until almost every street had its own free school. In 1746 and 1747, he enlarged his institutions, by adding to the course of instruction drawing, geometry, mechanics, architecture, agriculture, and the natural sciences. He now called his school *Realschule*, the first institution of this name. (See Real Schools). In 1748, the school was definitely organized as the Royal Real School of Berlin, and consisted of three schools,—a Latin school (*Pædagogium*), a German school, and a real school. A teachers' seminary was connected with it in the same year. The school gained great renown under Hecker and Hähn (q. v.), his assistant. Hecker also paid great attention to the new phonic method of reading as opposed to the spelling method. He was also the author of the Prussian school law, promulgated by Frederick the Great, in 1763, which made instruction compulsory for all children from the fifth to the thirteenth year of age. — See Dittes, *Schule der Pädagogik* (Leipsic, 1876); and Barnard, *German Educational Reformers*, and *Journal of Education*.

HEDDING COLLEGE, at Abington, Ill., founded in 1854, is under the control of the Methodist Episcopal Church. It admits both sexes. In 1873—4, it had 9 instructors, 200 preparatory and 18 collegiate students, and 1,200 volumes in its libraries. The value of its buildings, grounds, and apparatus was $50,000. The Rev. J. G. Evans, A. M., was the president.

HEDGE-SCHOOL, the name originally given, in Ireland, to a school held in the open air, beside a hedge; hence applied to any temporary school in the country, whether literally a hedge-school or not. In some parts of the United States, such schools are called *ambulatory schools*. For an amusing description of a hedge-school and its teacher, see William Carleton's *Traits and Stories of the Irish Peasantry* (Dublin 1830—32). The hedge-schoolmasters resembled somewhat the German *bacchants* (*scholares vagantes*), and were often men of quite respectable attainments in scholarship. The popular novelist Carleton, whose work is referred to above, was partly educated, near the beginning of the present century, in a hedge-school.

HEGEL, Georg Wilhelm Friedrich, one of Germany's most distinguished philosophers, was born in Stuttgart, Aug. 27., 1770, and died in Berlin, Nov. 14., 1831. In 1801, he was appointed *privat-docent*, and, in 1805, extraordinary professor of philosophy, at Jena. In 1807, he was professor at the gymnasium in Nuremberg; in 1816, professor in Heidelberg; and, in 1818, professor in Berlin. Though his life was chiefly devoted to the elaboration of a new system of philosophy, he exerted considerable influence on the educational system of Germany. While at Nuremberg, he received from the Bavarian government (1813) the appointment of school councilor; and, in 1820, the Prussian government appointed him a member of the scientific commission of education. Three years later, he was commissioned to report on the study of philosophy in the Prussian gymnasia. He, moreover, exerted, for a long time, a powerful influence over the ministry of public instruction in Prussia. He did but little, however, directly for the science of education; but the philosophical principles which he enunciated have been, through the exertions of his followers, the means of introducing many important modifications, both in educational theory and practice. In his own works, pedagogics appears only in the form of applied psychology and ethics; and as, according to his system, development is incomplete until it assumes an ethical form, practical education is simply the art of making men moral. The child is the offspring of nature; and, to become truly human, it must be, as it were, reborn—must pass from the natural into the self-conscious and spiritual condition. To aid this transition is education. Hegel attributed great importance to the institution of the family and of the state. The former he deemed the chief factor in education; and both together, the great nurse and teacher of humanity. He also placed great stress upon authority in the instruction of children. The attempt to develop the reasoning faculties at too early an age he reprehended as baneful; but the child should not be kept too long in the bondage of the senses, but should be early accustomed to think of supersensual things. He insisted strongly upon classical studies as the source of an indispensable culture. In general, however, Hegel himself elaborated no theory of education; but the essential principles of his philosophical system constitute the basis for such a theory, upon which his followers have, in part, worked. Among the noted educational writers who are followers of Hegel, we mention Rosenkranz, Thaulow, and Kapp. — See Rosenkranz, *Hegel's Leben* (1844); Kapp, *Hegel als Gymnasialdirector* (1835); Thaulow, *Hegel's Ansichten über Erziehung und Unterricht*, (3 vols., 1853—4); Haym, *Hegel und seine Zeit* (1857); Schmidt, *Geschichte der Pädagogik*, vol. IV.

HEGIUS, Alexander, one of the greatest German teachers in the second half of the 15th century, was born at Heck, in Westphalia, between 1430 and 1440, and died at Deventer, in 1498. His name, after the fashion of those times, was derived from his birthplace. He was educated by the famous Thomas à Kempis, in the school of the Hieronymians (q. v.) at Zwolle. After conducting schools at Basel and Emmerich, he opened another at Deventer, which, under his able management, became one of the most celebrated schools of that age. Among his pupils were Erasmus (q. v.) and Pope Adrian VI. Hegius greatly encouraged the study of the Greek language, and was one of the chief promoters of a better method of teaching the Latin classics. A collection of his works was published at Deventer. They are enumerated in Erhard, *Geschichte des Wiederaufblühens wissenschaftlicher Bildung in Deutschland*, vol. i. (See also Netherlands.)

HEIDELBERG COLLEGE, at Tiffin, Ohio, was founded in 1850, under the auspices of the Reformed Church in the United States, for the education of both sexes. It has an endowment of about $80,000. The college and society libraries, with that of the theological seminary, contain about 5,000 volumes. The institution comprises a collegiate department, with a classical course of four years, and a scientific course of three years, and an academy or preparatory department, with a classical and an English course. Special facilities are afforded for the study of German. Heidelberg Theological Seminary, though under a separate board of trustees, is intimately connected with the college. The cost of tuition in the classical course is $26 per annum; in the scientific course, $21; and in the academy, $17. In the theological seminary, it is free. In 1875—6, the college had 6 professors, and the theological seminary, 2. The number of students was 189; namely, college, 90; academy, 75; theological seminary, 24. The whole number of the *alumni* of the college was 138; of the theological seminary, 112. The president of the college is Rev. George W. Williard, D.D. (1876).

HEINICKE, Samuel, a German educator and teacher of deaf-mutes, born April 10., 1729, died April 30., 1790. Having grown up without education, he joined the army, when twenty-one years old, and by a careful use of his leisure hours acquired some knowledge by self-instruction. In 1760, he became, through the recommendation of Klopstock, tutor in the family of Count Schimmelmann, and, in 1768, teacher in Eppendorf. Finding here a deaf-mute, he tried a new method for the instruction of that class of people. Differing from the abbe de l'Epée (q. v.), who taught deaf-mutes to express themselves by means of signs and pantomimic gestures, and in writing, Heinicke strove to teach them to speak in the common language of articulate sounds, so that they might understand, and be understood by, every body. The sign language he considered only as a means to an end, not as the end itself. His chief aim was to practice the deaf in the same forms of expression, as are used by those that can hear. As he was quite successful, a number of deaf-mutes were sent to him from different countries for education. In 1778, at the request of the elector of Saxony, he returned to his native country; and, in the same year, founded, at Leipsic, the first German institution for the instruction of deaf-mutes. But Heinicke was an excellent educator generally. He did much to improve the wretched condition of the common schools, and zealously advocated the substitution of the phonic method of spelling.—See H. E. Stœtzner, *Samuel Heinicke, sein Leben und Wirken* (1870).

HENDERSON COLLEGE, at Henderson, Tex., was founded by the Methodist Episcopal Church as Fowler Institute, in 1840, and continued under Methodist control till 1870, when it was rechartered as Henderson College, and became non-sectarian. It is supported by tuition and incidental fees. There is a fund of $10,000, but not yet available. Both sexes are admitted. It has, besides the collegiate department, a preparatory and an inferior department. In 1874—5, there were 6 instructors and 200 students. Oscar H. Cooper has been the president since the organization of the college.

HENRY, Joseph, a distinguished American physicist, born in Albany, N. Y., Dec. 17., 1797. He was appointed professor of mathematics in the Albany Academy in 1826; and, shortly after, began a series of experiments in electricity, which led to the theoretical invention of the magnetic telegraph, several years before its practical establishment by Prof. Morse. He was appointed professor of natural philosophy in the College of New Jersey, at Princeton, in 1832, and has continued up to the present time his experiments and researches, not only in electro-magnetism, but in other departments of physics. He is the author of *Contributions to Electricity and Magnetism* (1839), and has been a frequent contributor to the *American Philosophical Transactions*, *Silliman's Journal*, *Journal of the Franklin Institute*, etc. On the organization of the Smithsonian Institution, at Washington, in 1846, Prof. Henry was appointed its secretary, which position he still holds.

HERBART, Johann Friedrich, a distinguished philosopher of Germany who made pedagogics the great end and aim of philosophical study, was born in Oldenburg, May 4., 1776, died in Göttingen, August 14., 1841. After studying at the university of Jena, where he attended the lectures of Fichte, he became, in 1797, a tutor in the family of a citizen of Bern, and at once began to elaborate a system of pedagogy. His pedagogical studies led to an intimate acquaintance with Pestalozzi, who, at that time, was teaching at Burgdorf in the canton of Bern. In 1800, he went to Bremen, where he delivered pedagogical lectures, and, in 1802, he became a *privat-docent* (lecturer) at the university of Göttingen. In 1805, he was promoted to an extraordinary professorship; in 1809, he received a call as ordinary professor to Königsberg; and, in 1833, he returned to Göttingen. In all these academic positions, he lectured on pedagogics as well as on philosophy, and gathered around himself a number of young men thoroughly imbued with his ideas. At Königsberg, he also founded, in 1810, a pedagogical seminary in which young teachers, under his immediate direction, were to instruct a select number of boys according to his educational principles. Herbart says, that his investigations were chiefly due to the settled conviction that very many of the tremendous gaps in our pedagogical knowledge are attributable to defects in our psychology, and that these must be remedied before a science of education is possible. His educational principles flow directly from his philosophy. His psychology recognizes no predetermined capacities in the soul which direct its future development. The soul, in itself, contains only the power of reacting against external influences. Such reaction constitutes perception; and the mind, as a conscious intelligence, resembles a machine constructed of these perceptions. If impressions from without are not guided, the result must be disorderly and worthless. Hence the necessity of systematic education, in order to give form and direction to the indefinite activity of the soul. In proportion, then, to the extent and regularity with which perceptions are called forth in the soul, will be the breadth and value of the mental organism which the soul creates out of its perceptions. The whole of Herbart's system is an indirect polemic against all theories which place the aim of education without the individual subject. Neither family, nor state, nor humanity, is the end of education, but the development of the individual himself. Every thing but the individual is an abstraction, and valueless except as it serves to advance his interests. Pedagogics, therefore, with Herbart is a department of ethics, or rather the method by which ethics secures its aim; namely, the perfection of the individual. The work of education has three parts: discipline, instruction, and training. The child has no control of himself. He is the prey of whatever lawless inclination may claim him. To overcome this is the office of discipline. Society and the family furnish a part of the needed discipline, but not enough; it must be supplemented by the systematic discipline of the school. Discipline, however, must not be continued any longer than is necessary, but care must also be taken not to relax it too soon. Instruction must not be limited to the acquirement of knowledge, or of technical skill. Its chief aim is the culture of the will; that is, to impart an insight into ethical relations and the ability to realize ethical ideas. Discipline and instruction must be united, in order to bring forth many-sidedness in knowledge and in character. Training aims to fix the moral lessons into abiding forms of character, and to bring the student to a point where he can undertake the work of self-culture. It follows from Herbart's psychology, that he would not be content with unrelated knowledge. According to him, the so-called faculties are produced and developed purely by the association of ideas. Mental vigor, therefore, can be secured only by a habit of looking at things in their relations; hence, the true order of teaching is to begin as soon as possible to give not merely the facts, but their bearings and connections. In this way, knowledge acquires an intellectual interest for the student, and a moral interest also; for the most important relations are ethical ones; and the highest aim of instruction is to enable one to see all things in their ethical relations, and to act accordingly. These points are constantly repeated by Herbart, and illustrated at considerable length and with great energy. To a certain extent also, he viewed statesmanship as a branch of pedagogics. The chief educational works of Herbart are: *Allgemeine Pädagogik* (1806), and *Umriss pädagogischer Vorlesungen* (1835; 2d edit., 1841). Among the numerous smaller works, the *Aphorismen zur Pädagogik* is of special importance for teachers. A full understanding of the educational principles of Herbart is, however, scarcely possible without a knowledge of his philosophical system, which is chiefly explained in his two principal works, *Psychologie* (2 vols., 1824—5), and *Allgemeine Metaphysik* (2 vols., 1828—9). His complete works were published by Hartenstein (12 vols., 1850—52). An edition of his educational writings, in chronological order, with introductions, notes, and a comparative register, was published by Willmann (Herbart's *Pädagogische Schriften*, 2 vols., 1873—5). A large number of educators have more fully developed the views of Herbart; prominent among these, are Mager, Waitz, Stoy, and Ziller. A biography of Herbart was published by Hartenstein (in an edition of the smaller philosophical writings of Herbart, 3 vols., 1842—3).—See also SCHMIDT, *Geschichte der Pädagogik*, IV., translated in the *Journal of Speculative Philosophy*, April, 1876. In May, 1876, his native city celebrated, with great solemnity, his centennial birthday, and erected a monument to him.

HERDER, Johann Gottfried von, one of Germany's most distinguished theologians, authors, and teachers, was born at Mohrungen, Aug. 25., 1744, and died in Weimar, Dec. 18., 1803. He early distinguished himself by his progress in scholarship; and his literary attainment gained him the friendship of a Russian physician, by whom he was induced to commence medical studies. But he soon renounced these, and resolved to devote himself to theology. In 1764, he was appointed teacher, and afterwards preacher, at the cathedral school in Riga; and while there, he attracted much attention by his writings as well as by the brilliancy and eloquence of his preaching. In 1769, he left Riga to travel in Germany, France, and Italy; and while at Strasburg was intimately associated with Goethe. In 1776, he became court preacher, general superintendent, and counselor of the Upper Consistory at Weimar, where he passed the remainder of his life, in constant communion with the most gifted minds of that brilliant period of German literary history. Here, too, he labored for the improvement of the schools. In 1783, he drew up a plan for their management, and secured an increase of salary to the teachers. A teachers' seminary was established in 1787, through his influence. In the lower schools he introduced the Pestalozzian method as far as it was practicable under the circumstances. Herder's views on education present many points of interest and value. His leading principle was, that the aim of education is to develop humanity. First and foremost, he says, we are required to be men; and any educational system which aims at less than the full culture of all the powers of manhood is treason toward God and humanity. It is only the purest and most gifted persons that should be teachers; for the teacher must not only know what the pupil is to learn, but he must be what he aims to have his pupil become. His connection with his pupils must be of the most intimate character. His intellectual instruction must be given with all the freshness of original discovery; and his moral teaching must have all the fervor of conviction, and the authority of absolute truth. In teaching science and history, it is not isolated facts that must be presented, but their relations and their aggregate logical significance. Especially should the student's self-activity be thoroughly aroused; and, hence, he favored the Socratic method of leading the pupil's mind to develop truth for itself from fundamental principles. The whole of education must be permeated with the spirit of humanity and with a fervent piety. Notwithstanding his enlarged views and deep insight, he was quite conservative. He condemned in unmeasured terms the raw and presumptuous reformers of his day; and the Philanthropinists did not entirely escape his censure. In one of his addresses, he remarks that "instead of the good old word *school*, a fashion has been introduced of using new and more showy terms, such as *Educational Institution*, and *Philanthropinum*; and that much is said of 'genius', 'original genius', which does every thing for itself, and has no need of any other instructor; and of wonderful self-development by one's own powers." He strongly opposed a "French education", instead of teaching in the native language. He also advocated that the lower classes of real schools should train useful citizens, and that the upper ones should form a scientific gymnasium. His views on the teaching of language were eminently sound and practical. "Grammar," he said, "must be learned from the language, and not the language from grammar; style, from speaking, and not speaking from an artificially formed style." He was, in every respect, a practical educator, and was proud to be considered such. "In my nineteenth year," he said, "I began teaching in the highest class of an academical institution, and from that time to this I have never been free from the responsibilities of a teacher, or else of a school officer." The complete edition of his works (45 vols., 1805—22) contains a large number of addresses and essays on educational subjects.—See SCHMIDT, *Geschichte der Pädagogik*, vol. IV.; RAUMER, *Geschichte der Pädagogik* (translated in BARNARD'S *German Teachers and Educators*).

HERMANN, Gottfried, one of the greatest classical scholars of modern times, born Nov. 28., 1772, died Dec. 31., 1848. He studied at the university of Leipsic, where he became, in 1794, *privat-docent* (lecturer); in 1798, extraordinary professor; and, in 1803, ordinary professor. At the time of his death, he was the senior professor of the university. He had a vigorous delivery, an unfailing memory, a fine perception of the beauties of poetry, and a complete mastery of the Latin language,—all qualities which rendered him an excellent teacher. When, in 1834, the philological seminary in Leipsic was revived, Hermann was appointed to conduct the Greek instruction. He banished all practical exercises in teaching from the seminary, because he believed that a man who had become a thorough scholar, would also be able to teach. He trained his pupils to translate back into Greek a translation from a Greek prose writer, so that the mistakes might be detected by a comparison with the Greek model, and, at the same time, show why the author had written differently. Hermann is generally regarded as the founder of a more rational treatment of Greek grammar, and as having thus indirectly exerted a considerable influence upon the improvement of grammatical science in general. His views on this subject are chiefly laid down in his work *De emendanda ratione Græcæ grammaticæ* (1801), and in his learned notes to Viger's *De præcipuis Græcæ dictionis idiotismis* (1802; 4th ed., 1834). His endeavors to elucidate the intellectual life of the ancient world chiefly through an accurate knowledge of the language and of the metrical form, involved him in literary controversies with Böckh, K. O. Müller, and Creuzer. His editions of the tragic Greek poets and of other Greek writers are still highly valued. Memoirs of his life and works have been published by O. Jahn (1849), and Köchly (1874).

HESPERIAN COLLEGE, at Woodland, Cal., under the control of the *Christian* denomination, was founded in 1869. It admits both sexes. In 1875—6, it had 10 instructors, 150 students, and productive funds to the amount of $50,000. The value of its buildings, grounds, and apparatus is $30,000. B. H. Smith, LL.D. is (1876) the president.

HESSUS, Eobanus, one of the foremost German educators of the time of the Reformation, born in 1488, died in 1540. He was appointed, in 1516, professor at the university of Erfurt; accepted, in 1525, a call to the newly established gymnasium of Nuremberg, returned in 1534 to Erfurt, and, in 1536, became professor of history at the university of Marburg. He was an intimate friend of Reuchlin, Melanchthon, and other eminent men of the age; and his reputation as a teacher was so great, that, as professor at Erfurt, he is said to have had at one time 1500 hearers. He was one of the best modern Latin poets; and, as author no less than as teacher, largely contributed to a better knowledge of Latin and Greek. Special works on the life of Hessus have been written by Camerarius (1553), Lossius (1797), Herz (1860), and Schwertzell (1873). An interesting account of Hessus is also given in the work of D. F. Strauss on Hutten (2d edit., 1871).

HEYNE, Christian Gottlob, a German scholar and educator, born Sept. 25., 1729, died July 14., 1812 He studied in the university of Leipsic, and after holding several minor positions, received, in 1763, a call to the university of Göttingen, where, besides his position as academic teacher, he also held those of director of the philological seminary, librarian in chief of the university library, and inspector of the *pædagogium* in Ilefeld. In his philological seminary, he educated a large number of efficient teachers; and as librarian, he succeeded in raising the university library to one of the largest and best arranged in Europe. As an organizer, he showed great talent in the *pædagogium* in Ilefeld as well as in the schools of Göttingen and Hanover, which, through his reforms, attained great celebrity throughout Germany. Heyne is recorded as one of the greatest German philologists of the 18th century. Besides editing several Latin and Greek classics, he wrote numerous works on classic antiquity. His life was written by Heeren (1813). — See also Kaemmel, in Schmid's *Encyclopädie*.

HIERONYMIANS, or Brethren of the Common Life, a religious order, which did much for education in the Netherlands and northern Germany, during the 14th, 15th, and 16th centuries. It was founded by Gerard Groot (also written Groote or Grote), a native of Deventer. He was born in 1340, and studied in Paris from 1355 to 1358, where he gave his attention to magic, astrology, and necromancy; but he renounced these arts and was chosen a canon in Aix-la-Chapelle and in Cologne. In the latter place, he preached in his native language,—a thing unheard of and bitterly opposed at that time. Urged by his friends and supporters, he founded an institution devoted to instruction and purity of life. Many friends joined him in this undertaking, and soon a society was formed, the members of which, without taking monastic vows, devoted their lives to piety, charity, and the education of the people. They depended for their subsistence on their own labor, and on property donated by the members on entering the order. The first house of the order was founded at Deventer, in 1384. Branch houses soon followed in many other cities of the Netherlands; and in many parts of northern Germany. Female associations were also formed, with similar objects. Where they had no institutions of their own, they taught in the existing schools. Thus, by the end of the 15th century, they had spread from the Scheldt to the Vistula. They regarded Hieronymus (St. Jerome) and St. Gregory (the Great) as their patron-saints, and hence called themselves *Hieronymians*, or *Gregorians*. Gerard only lived long enough to see the commencement of the work of the order, as he died in 1384. He appointed as his successor Florentius Radewin, who was born in 1350, studied at Prague, and became canon at Utrecht. As soon as he had heard of Gerard's influential career at Deventer, he had given up his position in Utrecht, and had gone to Deventer as a vicar, where he soon became an intimate friend of Gerard. He died, after a life of great usefulness, in the year 1400. It was he who proposed the living in common, which led to the order's being called *Brethren of the Common Life*. Among its other distinguished members, were Gerard Zerbolt, commonly styled Gerard of Zutphen, Thomas à Kempis, Johann Wessel, and the celebrated cardinal, Nicolaus Cusanus. Some of their pupils attained great celebrity in after life, among whom were Erasmus, Agricola, and Hermann Busche. They reached their greatest efficiency in the 16th century; and their last union was established at Cambrai, in 1505. After the Reformation, many of their number embraced the new faith, while the remainder were absorbed by the Jesuits. Although they cared for the education of all the people, they were particularly distinguished for their zeal in receiving the poor children of both sexes, and educating them. They laid particular stress on the religious element. The plan pursued in their instruction was simple in the extreme, and may be gathered from the following words of the founder: "Spend no time either on geometry, arithmetic, rhetoric, logic, grammar, poetry, or judicial astrology. All these branches Seneca rejects; how much more, then, should a spiritually-minded Christian pass them by, since they subserve in no respect the life of faith. Of the sciences of the Pagans, their ethics may not be so scrupulously shunned; since this was the special field of the wisest among them, as Socrates and Plato. That which does not improve a man, or at least does not reclaim him from evil, is positively hurtful. Neither ought we to read pagan books, nor, indeed, the Holy Scriptures in order merely to penetrate into the mysteries of nature by that means." They, however, endeavored to promote the study of the Bible by the common people; and to their efforts in that direction is attributed the foundation of Christian popular education; since to study the Bible, the people must be instructed in reading, which led necessarily to writing; and thus the seeds of intellectual progress were sown, which sprang up and bore fruit in the Reformation. Because of their activity in promoting education, the brethren were sometimes called the Scholastic Fraternity (*fratres scholares*); and, indeed, they devoted themselves not merely to the elementary instruction of the people, but to the higher branches of education, as is obvious from the many distinguished scholars found in their schools.—See Raumer, *Geschichte der Pädagogik*; translated in Barnard's *German Educators*; Delprat, *Over de Broederschap van G. Grote* (1836; German translation by Mohnike, 1840).

HIGH SCHOOLS, generally schools of secondary or academic instruction, corresponding, to the lower grades of the German gymnasia, but sometimes partaking rather of the character of real schools. Public high schools exist in most of the states of the Union, forming a part of the public-school system, being the connecting link between the elementary district, common, or grammar schools, and the state university, for which they perform the office of preparatory schools. Some of these schools are so organized as to comprise academic, normal, and commercial departments. In small cities and towns, high-school classes or departments, taught in the same building with the grammar schools, take the place of separate high schools. There is a great want of uniformity in the grade and character of these schools in different states and in different cities of the same state. Some are simply of a higher grade than the grammar schools; that is, they give instruction in more advanced studies; while others strictly form a a part of a graded system which includes a complete representation of primary, secondary, and superior instruction. In some of the large cities, as Boston, Philadelphia, Baltimore, Chicago, Cincinnati, Detroit, and St. Louis, the high school assumes large proportions, and performs a very important function, both as regards elementary and superior or university education, stimulating the one and supporting the other. The establishment of public high schools in the United States is of quite recent date; although, in Massachusetts, as early as 1797, the academies were virtually incorporated into the system of public schools, by receiving endowments of land from the state. In 1834, an act of the New York legislature required the regents of the university to apply the surplus income of the literature fund, beyond the sum of $12,000, to the education of common-school teachers, by distributing it to such academies as should undertake their instruction. Until 1837, when the Philadelphia High School was established, there was no institution of the kind in the United States outside of Massachusetts. Baltimore organized a high school in 1839; Cincinnati, in 1850; and Chicago, in 1856. In the city of New York, as early as 1826, efforts were made to establish a high school "for instruction in the higher branches of an English education, and in Latin and Greek;" but the plan was not realized until the organization of the New York Free Academy, in 1849, in pursuance of an act of the legislature, and a subsequent popular vote, the result of which was, 19,404 in favor of the measure, and 3.409 against it. This institution is now the College of the City of New York. Boston had no high school for girls until 1853; and the city of New York, no public institution for the higher education of females until the establishment of the Female Normal College, in 1870. It is thus within a period of less than twenty-five years that the system, now so extensive, of public high schools has grown up in the United States. In some of the states, the system is much better organized than in others, as to the gradation of the course of study, both in its relation to the elementary schools below and the university above. In some cases, the graduates of the high school are admitted *ipso facto* into the university. In Michigan, there is an arrangement by which high schools that desire a recognition from the university are visited and examined by a committee of the faculty; and, if approved, have their graduates admitted to the university without further examination. This plan appears to have worked well, especially in its effect upon the high schools themselves, as subjecting them to good scholastic supervision, and placing them in proper organic connection with the university. This is substantially the arrangement existing in a few other states, and is strongly advocated in some of the states in which it does not exist. In many places, however, much opposition has been made to the establishment of public high schools, as transcending the scope of state education, which, it has been contended, should be confined strictly to primary instruction. In support of this position, the small proportion of pupils attending these schools, as compared with the school population, has been urged to demonstrate the injustice, as alleged, of taxing the entire community for the higher education, and, therefore, the particular benefit, of so small a portion of it. On the other hand, it is urged that, although only a few directly enjoy the advantages afforded by these schools, the whole community is greatly benefited by their influence, independently of their elevating and stimulating effect upon the elementary schools. "I will thank any person," says Everett, "to show why it is expedient and beneficial in a community to make public provision for teaching the elements of learning, and not expedient nor beneficial to make similar provision to aid the learner's progress toward the mastery of the most difficult branches of science and the choicest refinement of literature." The specific grounds on which higher education at the public expense is advocated and defended are the following; (1) High schools serve to give increased efficiency to the elementary schools below them. (2) The high school and the state university, to which it is preparatory, constitute the best preservative of republican equality, and, therefore, a preventive of social caste; inasmuch as they afford the means for all, of whatever social grade, to enjoy the benefits of all the education which they have the capacity to receive. (3) High-school education is the means of discovering and developing genius and talent, by the cultivation of which the political, social, and industrial interests of the community are greatly advanced. (4) The vital forces in every community center in its leaders, political, social, and religious; and, hence, it is of the greatest importance that those gifted minds and those energetic characters that, with or without culture, always make themselves felt in a free community, should have, regardless of wealth or social grade, full opportunity of receiving such an education as will render the power they must inevitably wield, beneficent to society at large. "No system of public education," says Huxley, "is worthy the name of national, unless it creates a great educational ladder with one end in the gutter, and the other in the university." "Experience has proved," says Fras. Adams (in *Free School System of the United States*, London, 1875), "that elementary education flourishes most where the provision for higher education is most ample. If the elementary schools of Germany are the best in the world, it is owing, in a great measure, to the fact, that the higher schools are accessible to all classes. In England, not only have the aims of the elementary schools been educationally low and narrow, but an impassable gulf has separated the people's schools from the higher schools of the country. In the United States, the common schools have always produced the best results where the means of higher education have been the most plentiful." Superintendent Philbrick, of Boston, in his annual report for 1874, said, "The common school is always feeble and inefficient when high schools, academies, and colleges are wanting. Educational science teaches that educational improvement works from the top downward, and not from the bottom upward. Harvard College was, for a long period, the mainspring of the success of the common schools of Massachusetts." In 1874, the citizens of Kalamazoo, Mich., brought a case before the circuit court in order to test the right of a school board to establish and maintain a high school as a part of the public school system of the state. Against the right, it was argued that the law contemplated, in the free schools, only primary instruction in the elementary English studies, that, therefore, the establishment of a high school, with a curriculum embracing higher mathematics, languages, etc., was a transgression of the law; and that, consequently, taxation to support such an institution might be legally resisted by the people. The court, however, ruled against this point,—that the law providing for primary schools did not prohibit the establishment of other schools; that the enumeration of branches for a teacher's examination was only prescribing a minimum of qualification; that the legal direction, "all instruction shall be in the English language," must be held to refer to the medium for communicating knowledge, not to any subject of instruction; that, accordingly the teaching of Greek, Latin, German, French, etc., was not excluded; and that, as the school in question came fairly within the provided system of public schools, it might, like others, be sustained by a reasonable district taxation.

High schools should not be needlessly multiplied, and should be carefully prevented from trenching upon the sphere of the elementary schools. Since their value depends greatly on their influence upon the elementary schools, the requirements for admission should be such as to incite the latter to accurate and thorough scholarship within their sphere, and stimulate their pupils to faithful and earnest study. When the number of high schools or high-school departments is excessive, the tendency is to weaken this influence by reducing the standard for admission, or relaxing the strictness of the examinations. In some of the cities of the Union—New York, Boston, St. Louis, and others, the high school has been introduced as a part of the evening-school system. Besides the public high schools, there is a large class of private institutions of a similar grade, which differ only in name from seminaries, academies, classical schools, etc. In England, the great public schools, such as Eton, Harrow, etc., belong to the same class, as secondary or middle schools; and the High School of Edinburgh is a representative of the same class. (See SECONDARY INSTRUCTION.)

HIGHER EDUCATION. See HIGH SCHOOLS, SECONDARY INSTRUCTION, and SUPERIOR INSTRUCTION.

HIGHLAND UNIVERSITY, at Highland, Kan., under the control of the Presbyterians, was chartered in 1858. It has productive funds to the amount of $25,000. The cost of tuition is $33 per year. It has a preparatory and a collegiate department, to which both sexes are admitted, and there is a special course for young ladies. The library contains 5,000 volumes. In 1872—3, there were 6 instructors, and 145 preparatory, and 25 collegiate students.

HILLSDALE COLLEGE, at Hillsdale, Mich., under the control of the Freewill Baptists, was established at Spring Arbor in 1844, and chartered as Michigan Central College in 1845. It was removed to its present site and rechartered as 'Hillsdale College', in 1855. Both sexes are admitted. Over $25,000 have been subscribed to the endowment. Tuition fees are nominal. The library contains 4,000 volumes. The college has a preparatory and a collegiate department, with a classical and a scientific course, and also a theological and a commercial course, and courses in art and music. In 1872—3, there were 21 instructors and 579 students, of whom 197 were in the college classes, 273 in the preparatory departments, and 13 in the theological course.

HIRAM COLLEGE, at Hiram, Portage Co., Ohio, is under the control of the Disciples. It took its present title in 1867, growing out of the Western Reserve Eclectic Institute, founded in 1850. It is supported by tuition fees and an endowment of about $60,000. The libraries contain about 2,500 volumes. The collegiate department comprises (1) a classical course, (2) a Latin and scientific course, (3) a scientific course, and (4) a ladies' course. It has also a preparatory, a normal, a commercial, and an elementary course. Considerable atttention is given to preparing young men for the ministry. Many of the best known and most useful Disciple ministers have studied in this college. In 1874—5, there were 9 instructors and 233 students (126 males and 107 females), of whom 30 were of the collegiate grade. The president of the college is Burke A. Hinsdale, A.M. (1876).

HISTORY, as a branch of instruction, presents very many important points of inquiry for the educator. The vast field which it occupies as a realm of facts, the great difficulty in classifying these facts, and deducing from them any general principles or laws, or even in associating them so that they may be presented to the mind of the learner in groups bound together by some common relation, — these characteristics of history make it perhaps the most difficult which the educator has to deal with. This will account for the diversity of opinion as to the proper method of teaching it, as well as for the many obvious errors of method that exist. Some, indeed, have condemned it as a school study; on the ground that the mere facts of history, without the general laws which they teach, are of no account, while the study of the philosophy of history is too deep for immature minds. On this account, Prof. Bain contends that it is a subject proper only for the university. John Locke said, "As nothing teaches, so nothing delights, more than history. The first of these recommends it to the study of the grown man; the latter makes me think it fittest for a young lad". These extreme opinions arise from viewing the subject from different standpoints. There is no doubt that the study of history, like that of geography, botany, astronomy, and other school subjects may be presented to the mind of the child in such a manner as not only to be useless and distasteful, but actually injurious. As in every other subject, the educator is to consider the nature of the mind to be addressed, and the character of the study itself. Primarily, history is a narrative; and there is nothing which pleases children so much as narratives concerning things in which they take an interest, or with which they are familiar. If children, therefore, are to study history, they must first be interested in the persons and things that it refers to. Thus American children will be eager to learn about the discovery of America by Columbus, because it concerns the country in which they live; and they will be scarcely satisfied with any amount of detail in regard to the particular facts connected with that event. Columbus as a great personage will then loom up in their imagination, and their curiosity will be exerted to know something about him. This will interest them in Isabella, the good queen of Spain; and something may be said of her, and of the country to which she belonged. In this desultory way, and without any special effort to show the relations of events as to time or cause and effect, the conceptive faculty of quite young children may be addressed in teaching history, and thus their minds will be prepared for its regular study, by receiving those underlying conceptions which are constantly needed to make formal historical narratives interesting or even understood. "The fact", says Emerson, "must correspond to something in me to be credible or intelligible". It is in reference to this principle that Wickersham remarks, "It concerns us little to know the lineage of kings and queens, the intrigues of courts, or the plans of campaigns; but it would interest us much to be told how people in past times built their houses, worked their fields, or educated their children — what style of dress they wore, what kind of food they eat, what books they read." The latter classes of facts are not, however, more interesting in themselves, but because they are more nearly related to our individual experience. Different persons will not be interested in the same class of historical facts. The soldier will attend to the military history of a country; the statesman and politician, to the political; the agriculturist, to the methods of husbandry in use; and to a numerous class of minds the dynastic history—the "lineage of kings and queens", will possess supreme fascination. All departments of history are useful in their special applications; and are of interest to those who desire to know the facts which they severally comprehend. In arranging history for educational purposes, we must consider the degree of development of the pupil's mind; and in this respect historical study may be divided into three stages: (1) The *introductory*, in which the mind of the young child has to be prepared for the study, as above indicated; (2) The *intermediate*, at which the formal study of history commences, dealing principally with facts and their obvious relations; and (3) The *advanced*, in which the higher forms of generalization are presented, constituting what has been styled the *philosophy of history*. In the first stage, what has been called the "fragments of history", that is, brief and interesting narratives, biographical sketches, &c., clothed in a simple picturesque style, should constitute the subject matter of the instruction. This may be presented in a desultory manner, without any special regard to logical or chronological order, the great object being to interest the learner by filling his mind with vivid conceptions of certain events and personages. Of course, this preliminary instruction may take a wide range, embracing the most prominent persons and events in the history of the world, and thus constituting a valuable outline, on which to base the subsequent study. But this is not so important as that, in every thing that is taught, the young pupil's experience and imagination should be addressed; that is, the facts presented to be learned should be concrete facts, not mere abstractions. Epitomes of history are valueless for this purpose, because they attempt to cover the whole ground. As has been well said by a celebrated educationist, the use of an epitome is like giving a child an "index to learn by heart".

In the second stage, while the same principle should be steadily kept in view, the study should become more formal and systematic. It is here that the most important questions arise for consideration. The first of these concerns the choice between a compendium of history and a series of historical text-books on different nations. The system of special national text-books grew up at a time when, from national patriotism, each country considered its own history as foremost and hence, all others as of secondary importance; and it has been fostered, in the advance of historic learning, by a system of abridgments of large standard works, or by school books based, in method of treatment, upon them. But such treatment is not adapted to conditions for which the originals were not intended. Each of these special works presupposes the existence of all the others, and thus virtually depends on them for its general stand-point, and for that knowledge which is indispensable to render the narrative intelligible; and, hence, for school purposes, the abridgments are of little use, because this general knowledge cannot be supposed to exist. Besides that, the large standard works are too exclusively philosophical in their character and arrangement to admit of an abridgment for school purposes. Narrowing the field of view for the purpose of scientific investigation, such works naturally adopt largely the consecutive narrative form; but consecutive narrative is not essential when only general leading facts are to be presented, and narrative detail is unsuited to the treatment required for school instruction. There can be no perspective in such a mode of treatment. Leading facts rank side by side with subordinate ones, and the history assumes the form of dry annals. Excessive detail in historical text-books is always a fruitful source of vexation to both teacher and pupil. What is needed, for this stage of instruction, is a skillful grouping of facts, which, while it departs but little from the chronological order, shows the proper relation of events — how one brought about the other. In the history of the world, as of each separate country, and of every great event, as, for example, the Reformation, the Thirty Years' War, the Revolution in England, the American Revolution, the French Revolution, the great Civil War in the United States, there are certain conspicuous stand-points, or centers of interest, around which other events should be grouped, as dependent upon them. The same principle is opposed, in the teaching of general history, to confining the attention of the pupil exclusively to each nation in succession, throughout its entire history (*ethnographic method*). It is a well-defined feature of every historic movement that, in many of its epochs, it is carried along by some particular nation as the representative, for the time being, of some controlling idea or principle, other nations playing a subordinate part. This should be clearly brought out in the arrangement of the subject (*grouping method*). It is not always possible, however, to distinguish a single nation as holding such an undisputed prominence; but, where this question is in doubt, there is always a movement, more or less general, to which the contemporaneous nations are subject, and to which, therefore, the history of the separate nations should have a distinct reference. In the period of the Reformation, for example, it is desirable to present the nations collectively in their relation to it, the events which concern their separate existence being kept in the background. A system of instruction which presents, in succession and at widely separated intervals, the share of each particular nation in such a great movement as the Reformation, cannot possibly impress the mind of the pupil properly in regard to it. In the compilation of a compendium of history suitable for school use, a compromise is requisite between the plan of teaching the history of each nation by itself (*ethnographic method*) and that of teaching by periods or epochs, the history of each nation coming in where it belongs in the period (*synchronistic method*). The latter method, by short periods, centuries for instance, is useless for beginners, as it gives only a confused picture of the whole. In ancient history, it has but a limited application; because the nations of antiquity were essentially separate, coming on the stage at successive periods, and rarely blended, to any extent, in any general movement. The ethnographic method is, therefore, the best for this department of history, but may be departed from in certain portions of it, as, for example, in the history of the states of Greece. For beginners, the ethnographic method seems to be best, at least until a good general outline has been fixed in the mind, after which the grouping method ought to be steadily pursued, but still with a constant regard to the mental advancement and maturity of the student. The *chronological method* must, however, lead in every scheme of elementary historical teaching. The pupil must, above all things, attend to the order of time; or his subsequent reading and study will be greatly embarrassed. This method has been used in Germany from time immemorial, with modifications such as have been referred to, for adaptation to the purposes of elementary, burgher and real schools, and gymnasia. These modifications consist chiefly in the relative prominence given to the synchronistic and ethnographic principles. Stiehl's *Der vaterländische Geschichtsunterricht in unsern Elementarschulen — The history of our Country in the Elementary Schools* (Coblenz, 1842), and Haupt's *Weltgeschichte nach Pestalozzi's Grundsätzen — General History on the Principles of Pestalozzi* (1841), were attempts to introduce the grouping method. Many of the school text-books on history, published in Great Britain and the United States, are based on the same system; but teachers have generally favored the ethnographic system, as less fragmentary and disjointed. For a field so vast as that of general history, it is of the highest importance that the idea of both unity and sequence should be impressed upon the pupil's mind. In the chronologic method, the perspective view which this unification of the broader parts demands, is not dependent on the special notions of any teacher or compiler, but grows up in the mind from the study of the facts themselves. In the treatment of antiquity, the history of the eastern nations precedes that of the Greeks, and the Greeks the Romans; and while teaching each in chronologic order, the other contemporaneous nations should be brought in, as episodes, at such periods and in such connections, as will best illustrate the history of the great nation which, for the time being, is controlling the affairs of the world. Egypt, Assyria, Babylon, Persia, Greece, Rome (republic and empire), may, in succession, be made the leading nation; and all the others will come in at certain periods. In the middle ages, the treatment should be analogous; there is at every period, a great tribe or nation, whether the Franks, the Saracens, the Normans, or the Germans, the history of whom, treated in its chronologic order, will absorb the remainder, except what may come in episodically. In modern history, the ethnographic principle must at first have prominence, before the pupil can study the great European movements, such as the Reformation and the Thirty Years' War, with any real satisfaction or benefit. As Ranke remarks, "it is only on the side of the activity that the events can be judged." In the early part of the 16th century, the policy of Charles V., in the latter part, the Protestant development in Holland, France, and England controls the scene. In the 17th, alternately, the advance of the Jesuits, the Thirty Years' War, and the reign of Louis XIV., claim an absorbing attention. In the 18th, the England of Walpole, the Prussia of Frederick, and the French Revolution, successively give the stand-point for understanding European history. Chiefly as episodes, in mediæval and modern history, come in certain great topics; such as the Saracenic civilization, the Byzantine culture, the Turkish ascendency, the maritime discoveries of Portugal and Spain, the Italian Renaissance, the struggle of the Dutch Republic, the rise of Sweden and Russia, etc. Whatever method may be used, *synchronistic exercises* will be constantly requisite to a full understanding of the relations of events. These may take the form of lists of sovereigns grouped into centuries and arranged, side by side, in perpendicular columns; or leading events arranged in the same way. After the history of any nation or period has been studied in the chronological order, various methods of arrangement may be adopted for the purpose of review, varying the sequence which has been followed in the regular lessons. Thus, the pupil may be required to state all the events connected with a particular place, or a particular individual, which he has previously learned in a strictly chronologic order, or in connection with the national history. The *topical method* of recitation will be found the most effective, not only for the attainment of the best results as far as history itself is concerned, but for collateral culture, particularly of expression. On account of the latter, accuracy in language should, as much as possible be insisted upon; and the pupils should be required to use their own language, instead of memorizing that of the text-book. Brief written sketches of events, personages, periods, etc., will be of great use in making this collateral culture effective, and will also afford much useful practice in other respects.—A severe and sustained drill on a single manual is of great use for the strong landmarks it leaves in the pupil's mind; but, to be thoroughly effective as an educational process, it ought to be accompanied with the reading, to some extent, of auxiliary books giving interesting detail in regard to prominent points. Such a system of independent reading by the different members of a class, properly utilized, will lead to the acquisition of much interesting information, each pupil bringing his own contribution, to be offered in connection with the class exercises. Children, at an early age, with a taste for reading, will devour solid books of history, when not under compulsion; especially if they have a strong frame-work fixed in their minds for the separate facts to attach themselves to; and such reading will constitute a very important part of mental culture. — *Dates* are to some extent needed, but only in connection with the general narrative. To memorize the dates of isolated events is worse than useless. The dates of certain great events, marking epochs, should be carefully fixed in the mind. As already said, the method pursued should be such as to keep the stream of time constantly in view; and this will render the memorizing of many dates unnecessary. "Dates", says the German writer Abbenrode, "are the most simple monitors of memory, and can never be entirely omitted, though they ought to be limited for children, and sometimes to be made round numbers, for the sake of memory; nay, a sensible arrangement of them often aids the understanding of related events better than could be done by long expositions." Chronological relations may be better taught by means of historical charts, representing the exact position in time of every nation and event, just as a map represents countries, cities, etc., in space. These should be large enough to show clearly to the eye what is represented; and the different nations should be marked out in strong colors. Of such charts, Labberton's and Halsey's are examples. *Progressive maps*, showing the states and countries, and their extent at different periods, are indispensable. American school manuals, such as Anderson's *General History*, Swinton's *Outlines of History*, and Thalheimer's manuals of ancient and modern history, are copiously supplied with maps of this kind. Those of Freeman's *Old English History* (London, 1869) are also good examples of such maps; as are also those of Labberton's *Historical Atlas* (Phila., 1872). These *progressive maps* illustrate the relation of geography and history, and afford an indication of the extent to which geographical study is needed in connection with that of history. It is, however, desirable that all the places mentioned in the history should be at least pointed out on the map.

Good historical *lectures* are eminently beneficial, in connection with regular lessons, or re-inforced by suitable class exercises. The taking of notes by the pupils is of little value; because such notes can concern only definite and disconnected facts which should be impressed upon the mind by the study of a compendium or by class drill; while the lecture is designed to give broad, general views of events, in their relations, and in their bearing on some great historical movement. The taking of notes by young pupils must necessarily interrupt the current of their thought, and thus mar the effect of the lecture. It is, however, in the third or advanced stage of historical study that lectures have their special place.

The *class of facts*— the kind of material — to be selected for the elementary study of history is another important consideration for the teacher, as well as for the compiler of a school compendium. There is a great diversity in this respect. In some text-books, undue prominence is given to the political and military history, every thing pertaining to social life being left out. This deprives the study of much of its strongest and best interest. The condition and progress of the people in the elements of civilization,—the industrial and fine arts, literature, education, social culture, manners, customs, etc, should be graphically sketched, in connection with the political history, which must, of course, constitute the frame-work of the whole. The office of history as a school study, is not only to give information in regard to the events of the past, but it is to discipline the mind by cultivating and improving (1) the memory, (2) the imagination, (3) the judgment, (4) the power of expression, and (5) the moral and emotional nature. The pupil, when properly instructed, has his sympathies aroused: he applauds the noble, the patriotic, and the virtuous; he condemns the mean, the selfish, and the wicked. Every lesson teaches him by example, for it confronts him with either human virtue or human wickedness. The false tinsel of glory must not be permitted to conceal the selfishness, cruelty, and wrong of the ambitious tyrant or conqueror; and the nobleness of the martyr will not be debased because he pines in a dungeon or dies on the scaffold. Treated in the right spirit, history thus becomes a great moral teacher for pupils of every class and grade.

In the *third stage*, that of superior instruction, history has strong claims to attention. Whatever the sphere of life in which the student is to engage, he should possess himself of the key to the records of the past history of mankind. History may peculiarly be called a "living study," since it draws its interest at once from the slow but certain movement of human forces, among which self-interest, will, and passion play a great part. The field is so vast, that the untrained student will be lost in the maze, and will wander about aimless and bewildered. It is the office of education to show that the elements are really simple, and to impart a system to the vast crowd of facts, by which they may become useful, by being co-ordinated. It is here, then, that history assumes whatever scientific phase it may be capable of. What has been called the *philosophy of history* is, in an especial manner and degree, suitable for college study, as it brings into play the higher faculties of the mind, — generalization, reason, and judgment. At this stage, we do not rest satisfied with a simple narrative of events, but we attempt to trace them to their real causes, and deduce from them those general laws on which political and social science must be based. "The true science of history," says Bossuet, "is to observe the latent tendencies which have prepared great changes, and the important conjunctures which have brought them into fact." Those latent tendencies are to be looked for in the principles of human nature as constituting one factor; while the influences which constitute the other factors are neither obvious, nor established in the general convictions of mankind. This gives rise to various theories; as the *materialistic theory*, which supposes the co-ordinate factor in bringing about the changes in history to be the forces of material nature, acting on human character and human will; the *spiritualistic theory* which attributes to the soul of man a certain freedom of purpose and will, acting independently of its material surroundings; and the *theistic theory*, which attributes great movements and changes in the world's history to the special interposition of an overruling Providence, a Divine will, and thus makes "God in history" the supreme source of all the great events that have marked the intellectual, social, and moral progress of mankind. These theories may, however, be called the metaphysics of history; they are not essential to the investigation of the laws which constitute its philosophy; inasmuch as the generalizations upon which these laws are based, are chiefly independent of them, the course of human events, like the course of nature, being controlled only by general laws.

What has already been suggested has exclusive reference to facts, or statements of facts, accepted as such; but there is another department of history which concerns the sources of history, their nature and credibility; and this has an indisputable claim upon the attention of those who teach, and those who study history in its advanced stages. Two objects will be subserved by this: (1) The mind will acquire the useful habit of withholding its assent from all statements that are not supported by sufficient testimony; and (2) The judgment and critical faculty will receive a practical culture which must prove of great service in the further prosecution of study, and in the affairs of daily life. In the prosecution of this historical criticism, the student is invariably to consider (1) the writer or writers from whom the narration proceeds, (2) their means of information, (3) their character for sagacity and discernment, (4) their interests, associations, and affections. All these inevitably color the narrative, and hence constitute an important element to be considered in the kind and degree of credibility to which it is entitled.—In the struggle, for some time in progress, between the friends of classical and of scientific studies, history as a branch of education holds a strong and prominent position. While it is a record of the past, it is, in fact, the science of the future; and one only has to imagine the condition of the world, were all its annals destroyed, to appreciate the practical value of this science. The studies pertaining to matter and force claim supreme consideration with many; and those pertaining to the mere linguistic expression of thought, often obsolete and valueless, with many others; but history deals with the facts of human intelligence and will, illustrates the principles which control the progress of mankind in all the elements of civilization, and hence assumes an office and agency in connection with human education, without which it must be measurably ineffective and imperfect.— See Wickersham, *Methods of Instruction* (Phila., 1865); Currie, *Principles and Practice of Common-School Education* (Edinburgh and London); Von Raumer, *Geschichte der Pädagogik*, trans. in Barnard's *Journal of Education*, No. xx.; also, in the same, *Catechism on Methods of Teaching*, s. v. *History*, by Abbenrode, in which will be found a list of valuable works for consultation on the methods of teaching this subject.

HIWASSEE COLLEGE, in Monroe Co., Tenn., 7 miles from Sweetwater, was founded in 1849, under the auspices of the Methodist Episcopal Church, South. The name of the post-office is the same as that of the institution. It is supported by tuition fees, and has a preparatory and a collegiate department. The library contains about 1,500 volumes. The tuition fee for five months is $12.50 for primary studies, $15 for intermediate, and $12 for collegiate. A law department has been organized, but it has made little progress. In 1875—6, the college had 5 instructors and 186 students. John H. Brunner, A. M., is the president of the institution (1876).

HOBART COLLEGE, at Geneva, N. Y., was chartered in 1825, growing out of an academy and divinity school established by Bishop Hobart of the Protestant Episcopal Church, in 1821. Its entire endowment is something over $300,000, of which, perhaps, $60,000 is represented by land and buildings, while one considerable portion is in the shape of free scholarships, of which there are twenty-six, leaving less than $21,000 of annual income from endowment for the support and maintenance of the college. A considerable portion of the entire sum ($4,200) is in the shape of annuities, contributed from New York City. The library contains about 13,000 volumes. There are two courses, a classical of four years, and a scientific of two years. The tuition fee is $50 a year. The scholarships are primarily designed for students intended for the ministry. In 1875—6, there were 7 instructors and 29 students. The presidents have been as follows: the Rev. Jasper Adams, D. D., 1826—28; the Rev. Richard S. Mason, D. D., 1830—35; the Rev. Benj. Hale, D. D., 1836—57; the Rev. Abner Jackson, D. D., LL. D., 1858—68; the Rev. James Kent Stone, D. D., 1869—70; the Rev. James Rankine, D. D., 1870—73; the Rev. Maunsell Van Rensselaer, D. D., LL. D., 1873—76; and the Rev. William Stevens Perry, D. D., LL. D., the present incumbent, appointed in 1876.

HOFWYL, Schools of, a group of educational institutions established by Fellenberg, which very widely attracted attention, and attained a high reputation for the excellence of the theory on which they were based, and for their practical success. Hofwyl, originally called Wylhof, was a large estate, about six miles from Bern, Switzerland, which was purchased by Fellenberg, in 1799, for the purpose of enabling him to carry out his peculiar educational views. Deeply impressed with the need of ameliorating the condition of the poorer classes by affording them the means of a practical education, he was also convinced that the education received by the higher classes in the universities and middle schools, very greatly needed reform. He designed, therefore, to establish "an institution for both classes, in which they should be so separated, as to prevent confusion, and yet so connected, that each might observe the other, and that occasion might be given to establish, on a Christian basis, the character of each." Agriculture he believed best adapted, as an occupation, to develop the powers of both mind and body in their proper harmony. Hence, he conceived that an agricultural school would form the best basis for the carrying out of his proposed plans. In 1829, Hofwyl was described as a village of about 300 inhabitants, comprising (1) A farm, of about 600 acres; (2) Workshops, for the fabrication and repair of agricultural implements, and of clothing for the inhabitants; (3) A lithographic establishment in which music and other things needed in the institution were printed; (4) A Literary Institution for the education of the higher classes; (5) A Practical Institution for those who were destined for trade, or whose circumstances did not permit a more complete education; and (6) An Agricultural Institution for the education of the laboring classes. The secluded situation of Hofwyl, at a convenient distance from a large town, and surrounded by some of the most beautiful objects of Swiss scenery, particularly commended it to Fellenberg. The first of the schools was commenced in 1804; but, in 1829, the writer of a series of letters, published in the *American Annals of Education*, for 1831, thus described the institutions of Hofwyl:

> "On entering Hofwyl from Bern, the traveler finds himself in an extensive court or play-ground, furnished with instruments for gymnastic exercises, and a hillock of clean sand, in which the younger boys exercise their ingenuity in digging caves and building castles, surrounded on three sides by the building devoted to the literary institutions, and sheltered on the west by a little wood, composed of a variety of trees, which serve at once as a place for botanical observations, and as a retreat during the heat of summer. In pleasant weather, the lessons are not unfrequently given here, in arbors furnished with seats for this purpose. The principal building on the east of this court, is inhabited by 80 pupils, under the constant superintendence of Fellenberg and four of his children. The basement story is occupied by the kitchen and store-rooms. The first floor is divided into four sections by halls which traverse the building in its length and breath. One of these sections is occupied by the superintendents; another, by the dining hall and music room; a third and fourth, by the chapel and three large and lofty rooms for study. The second floor is devoted to the class rooms, the library, and the collection of casts. The third and attic stories contain the dormitories of the pupils, and chambers for the superintendents. The size, airiness, and neatness of every part of the building are very striking; and a well-arranged system of stoves on the Russian plan, maintains a mild and uniform temperature during the winter, which is not to be found in climates far less severe, where the methods of employing fuel are less perfect. In this institution, Fellenberg proposes to

give a complete education preparatory to professional studies. Between 20 and 30 instructors are employed in this establishment, most of whom reside in another building, and have no connection with the pupils, except during the hours of instruction. Two small buildings, which shelter the court on the north and south, contain a large warm bath for winter, the store-room for the gardening tools of the pupils, a cabinet-maker's shop, in which those who have the disposition are taught this art, the book-bindery of the institution, and several rooms which are devoted to exercises in instrumental music, fencing, and dancing, which would interfere with the tranquillity necessary in the principal building. Beyond the Literary Institution is a second court, furnished, like the first, with frames and poles for gymnastic exercises. On the east side of this court, and at the entrance of the first court, are garden spots, assigned to the pupils as a means of amusement and exercise; and, at a little distance on the side of the hill, a circular cold bath of hewn stone, 90 feet in diameter, and 10 feet deep, in which they are taught to swim, with a neat bathing-house in the Gothic style. On the west side of the court is the *château*, or family mansion, in which Mrs. Fellenberg resides with her younger children. It also contains the *bureau*, or counting-house, of the establishment, in which strangers are received, and the business of the institution transacted, by a person devoted to this object. It likewise serves as a depot for the little articles which the pupils have occasion to purchase. In the garden of the *château*, is the school for peasant girls, under the immediate direction of Mrs. Fellenberg, and one of her daughters. In the rear of the *château*, are two buildings occupied by 20 or 30 pupils of the Practical Institution. These are lodged and fed in a more simple manner than the pupils in the Literary Institution, and are permitted to avail themselves of its lessons, and to partake of the labors of the farm, or the counting-house, according to their necessities and destination.—In the rear of these buildings, is a second cold bath of hewn stone, only 2 feet in depth, designed for the use of the younger pupils. Adjoining this is a building 150 feet long, the lower part of which forms a large sheltered arena for riding and gymnastic exercises in unpleasant weather. The upper stories are occupied by the class rooms and dormitories of the Agricultural Institution, in which children of the laboring classes are taught the practical part of agriculture, and receive three or four hours of instruction daily in reading, writing, arithmetic, and other useful branches.... An interesting branch of the Institution of Hofwyl is the colony of Meykirk, at the distance of five or six miles. It consists of 8 or 10 poor boys who were placed under the direction of a teacher on a spot of uncultivated ground, from which they were expected to obtain the means of subsistence. It is designed as an experiment on the practicability of providing for the support and education of friendless children, without any further expense than that of the soil which they cultivate. Several hours are devoted daily to intellectual and religious instruction, and thus the children advance in cultivation and knowledge, as well as in hardihood and industry."

It was a ruling principle with Fellenberg, in the management of Hofwyl, that "gradual progress is the only sure progress." And he carefully avoided bringing together a large number of children of various characters, to be subjected to a kind of discipline entirely new to them. He commenced with introducing two or three boys into his own family; and afterwards he would receive only a few pupils at once into his school, so that they might fall insensibly into the prevailing habits and discipline. Wehrli, who distinguished himself so highly as an assistant of Fellenberg, was thus taken into his family; and the active benevolent spirit was so rapidly and strongly developed in him, that, before the end of the year, he requested to be placed with three pupils, gathered from the highways and hedges, in the farm-house of the establishment. Here Wehrli partook of their straw beds and vegetable diet, became their fellow laborer and companion, as well as their teacher, and thus laid the foundation of the Agricultural Institution, in 1808. The Normal School, or Seminary for Teachers, was an important addition to the institution. The first year, gratuitous instruction in the art of teaching was given to 42 teachers from the Canton of Bern. Subsequently a number of young Russians, of the highest class, were sent by the emperor Alexander to be instructed; but the Russian government afterwards withdrew its patronage, being jealous of the liberalizing influence of Hofwyl. Other European states entertained the same feeling. Many English and Swiss pupils were instructed in this school. In 1823, a building was erected in the garden of the mansion, to accommodate a school for poor girls.

All the schools at Hofwyl were conducted on the soundest and most approved principles of education, and with a devotion, on the part of the instructors, that could not but be followed by success. In 1813, a commission, at the head of which was M. Ringger, one of the most distinguished patriots of Switzerland, was appointed to examine the Agricultural School. The report of this commission (published at Paris, 1815) is a most interesting document. Six days were spent in the examination, which embraced all the details of the labors, studies, and religious exercises of the pupils, their food, dress, and accommodations. The approval of the commission was full and emphatic. Of the noble Wehrli the report expressed great admiration: "From the dawn of day," it remarked, "he seems to have no thought nor time except for his pupils. When he came among them, amidst their labors or amusements, he appeared rather like an elder brother than an instructor." The school at that time comprised 23 boys, from the lowest and often the most vicious families — some of them abandoned children—and, literally, taken from the highways and hedges; and yet they lived, under a mild system of government, in perfect peace and harmony. Such was the effect of the sound principles, wise administration, and devoted labors of Fellenberg and his co-laborers, in this most interesting institution. It still remains under the control of the descendants of Fellenberg, and was advertised by them to be re-opened, after thorough renovation and repairs, on Sept. 23., 1876, under the management of Mr. A. Fr. Andresen, the successor of Dr. Edward Müller. For a full account of Fellenberg's system, see *American Annals of Education*, vol. I., passim. (See also FELLENBERG.)

HOLBROOK, Josiah, distinguished for his labors in behalf of science teaching in common schools and the diffusion of useful knowledge among all classes, was born in Derby, Ct., in 1788, and died near Lynchburg, Va., in 1851.

It was while pursuing his studies in Yale College, that, under the instruction of Prof. Silliman, he imbibed that fondness for natural science, particularly chemistry and geology, which gave direction to his future life. For some time after graduating, in 1810, he gave his attention to agriculture, managing his father's farm at Derby. There he took part in the establishment of an agricultural school, in which he delivered lectures on his favorite sciences. In 1826, he published his plan for an *Association of Adults for Mutual Instruction*, and organized the *Millbury Lyceum*, as a branch of the projected *American Lyceum*, which he designed to consist of affiliated lyceums, or associations for mutual improvement, in every state of the Union. Thus the town lyceums were, by delegates, to constitute a county board of education, the county boards, in a similar manner, a state board; and the state boards were to be represented in a grand national convention, the object being to promote general education and the spread of intelligence among all classes. Hundreds of these lyceums were established in various parts of the United States, through the indefatigable labors of Mr. Holbrook, who gave his whole time to the delivery of scientific lectures, the distribution of circulars and tracts, and the personal visitation of schools. In 1825, he began the manufacture of cheap and simple school apparatus for illustrating geology, natural philosophy, and geometry; which, in 1829, in connection with Timothy Claxton, of Boston, he greatly extended, into what was afterwards known as the *Holbrook School Apparatus*. In 1842, he undertook the organization of a system of *school exchanges*, the object of which was an interchange, among schools in different parts of the country and in foreign countries, of specimens of pupils' work; such as, maps, drawings, geometrical solids, collections of minerals, etc. In this way, he conceived, the intellectual activity of the pupils would be stimulated; and, besides, by becoming acquainted with the products of each other's labor, their standard of excellence would be elevated, and their desire for improvement increased. This scheme met with considerable favor in many parts of the country, particularly, in the city of New York, and for a time was successfully carried on. The *American Lyceum* also, for a while, greatly flourished. In 1828, a public meeting was held in Boston to promote its objects, at which Daniel Webster presided, and George B. Emerson acted as secretary; and resolutions were adopted commending the *Lyceum* to public favor and support. At other meetings, Edward Everett took part in the proceedings; and subsequently, out of this movement, in favor of popular education, grew the *Boston Society for the Diffusion of Useful Knowledge*, followed soon after by the *Boston Lyceum*; and, partly as the result of the same awakening, the *American Institute of Instruction* was established in 1830; and the next year, the *Florida Education Society* was organized at Tallahassee. The *American Lyceum* held its first national convention, May 4., 1831, in New York, and adopted a constitution. There were present delegates from Maine, Massachusetts, New York, Pennsylvania, Yale College, the city of Washington, and other places; and Stephen Van Rensselaer was elected its first president. A general meeting was held each succeeding year till 1839, when a special convention, held in Philadelphia November 22., terminated the public proceedings of the Lyceum.— Mr. Holbrook continued in his favorite enterprises of philanthropy until the close of his life. While on a visit to Virginia, near Lynchburg, he went out for geological exploration, and was not again seen until his body was found at the foot of a cliff, from which it was supposed he had fallen. Few lives have been so earnest, unselfish, and philanthropic; and to very few has it been given to be the means of stimulating the intellectual activity of so many thousands. — See BARNARD'S *Journal of Education*, vols. VIII., and XIV.; and *American Educators*, vol. II.; *American Annals of Education;* BOURNE, *History of the Public School Society* (N. Y., 1870).

HOLIDAY. See SCHOOL FESTIVALS.

HOLLAND. See NETHERLANDS.

HOLY ANGELS' COLLEGE, at Vancouver, Washington Ter., under Roman Catholic control, was founded in 1860. It is supported by tuition fees and voluntary contributions. In 1876, it had 70 pupils. Its presidents have been as follows: the Rev. J. B. Brouillet, 1860—62; the Rev. P. Means, 1862—72; the Rev. P. Hylebos, 1872—3; and the Rev. Louis G. Schram, the present incumbent, appointed in 1873.

HOLY CROSS, College of the, at Worcester, Mass., was founded in 1843 by the Rt. Rev. Benedict Joseph Fenwick, Roman Catholic Bishop of Boston, and was given by him to the Fathers of the Society of Jesus. In 1865, it was incorporated by the legislature of the state, with power and authority "to confer such degrees as are conferred by any college in this commonwealth, except medical degrees." The object of the institution is to prepare youth for a *professional* or for a *commercial* course of life. The course of studies embraces, in its whole extent, a period of seven years, of which three are given to the preparatory and junior classes, and the remainder to the senior. The candidates for the degree of Bachelor of Arts must undergo an examination in rational and natural philosophy, astronomy, and chemistry, and must be well acquainted with Latin, Greek, and mathematics. The charge for board and tuition is $250 per annum, besides some extras. In 1874—5, there were 12 instructors and 177 students. The number of degrees conferred at the commencement in 1875 was 13. The library contains 11,000 volumes. The Rev. Joseph B. O'Hagan, S. J., is (1876) the president.

HOME EDUCATION is that which is carried on in the home circle, or family, as contrasted with that which is afforded by the school. Up to a certain age, and within a certain sphere, home education, or its equivalent, is not only indispensable but inevitable. The parents are the first teachers, especially the mother; and the educative influences of the nursery not only precede in time, but exceed in power, those of the school. Here the foundation is laid on which the school-teacher must subsequently build; and, comparatively speaking, more is accomplished in the period of earliest childhood, both in storing the mind and in forming the disposition and character, than during any equal number of subsequent years. "A child gains more ideas," says Lord Brougham, "in the first four years of his life than ever afterward." Early home education consists peculiarly in what has been called *unconscious tuition*, by means of which the plastic nature of the young child is insensibly moulded by the agencies which environ it. The mother chiefly controls these agencies, which may be enumerated as follows: (1) The affectionate tenderness which she displays, in ministering to the wants and gratifying the desires of the child, and in sympathizing with and alleviating its distresses; (2) Her behavior, as being delicate and refined, or coarse and rude,—showing self-restraint and dignity, or manifesting impulsiveness and passion; (3) The tones of her voice—sweet and tender, or harsh and dissonant, firm and decisive, or weak and yielding; (4) The expression of her face, implying similar traits; (5) The force of her will, under the intelligent guidance of educational principles and the restraints of conscience. Such are the elements of a mother's educative power,—a power the exercise of which results in forming in the child traits of character that no succeeding agency of circumstance, education, or self-discipline can entirely efface. It will be seen, from this enumeration, that the mother's influence is rather moral than intellectual; indeed, the special period of its exercise supersedes the necessity of any formal cultivation of the knowing faculties. The child, during the first few years of its existence needs little direction in this respect. Natural curiosity and innate activity constantly stimulate the growth of the mind, and fill it with those ideas which are to constitute, in succeeding years, the materials of thought. It is just as absurd to subject a very young child to formal instruction as it would be to attempt the development of its physical powers by gymnastic exercises. Watchfulness is, however, constantly required to check the formation of bad habits, which have just as strong a tendency to spring up in the young mind as rank weeds in a virgin soil. (See HABIT.) The period of exclusive home education here referred to being so decisive of the future character of the child, and the mother being the first and most effective of all educators, it will be apparent that the science of education, in its most comprehensive sense, should constitute an essential part of the curriculum of every female seminary or college. Particularly should the future mother be taught to appreciate the character of the influence, in all its phases, which she is to exert; as well as to understand, how to render it effectual in contributing to the future welfare of her child. The father, at a somewhat later period, but in a similar manner, is a powerful educator within the circle of home. Both by precept and example, but especially by the latter, he makes life-long impressions. In vain are precepts, however, if they are not fully supported by example. What a terrible indictment is brought by Quintilian against the home education of his time in the following suggestive statement: "Would that we ourselves did not corrupt the morals of our children! We are delighted if they utter any thing immodest. Expressions which would not be tolerated even from the effeminate youths of Alexandria, we hear from them with a smile and a kiss. Nor is this wonderful; we have taught them; they have heard such language from ourselves. They see our mistresses, our male objects of affection; every dining-room rings with impure songs; things shameful to be told are objects of sight. From such practices springs habit, and afterwards nature. The unfortunate children learn these vices before they know that they are vices; and hence, rendered luxurious and effeminate, they do not imbibe immorality from the schools, but carry it themselves into the schools." While contemplating so shocking a picture as this, not of home education but of home corruption, no one can wonder at the degree of degeneracy which the political and social system of the Romans finally reached. While, in the grade of society to which the above quotation refers, no child, in the state of society of our times, could be subjected to such contaminating influences; yet, even at present, the impressions, both intellectual and moral, received by children in very many of the home circles of what are considered the better classes of society, are rather debasing than elevating. The complaint is often made by teachers that the children placed under their care are so depraved by bad home training, or in consequence of absolute neglect, that their efforts to discipline and instruct these pupils are almost useless. This is the more to be regretted, as school education can, in most cases, only supplement that of home; and because the influences that center in the latter are always more potent than those wielded by the former, chiefly because school education is primarily intellectual; whereas that of home is primarily moral. At any rate, such is the fact generally.

After the period of formal instruction has arrived, the question arises in the minds of many parents, whether it is better to detain the child at home to be instructed by private tutors or to submit it to the discipline and instruction of the school. This question has been much discussed by educators. Quintilian, in regard to this point, said, in favor of school education, that "it had the sanction of those by whom the polity of the most eminent states was settled, as well as that of the most illustrious authors." The following arguments are generally adduced to prove that the education acquired in school is to be preferred to any that is possible by private tutors at home: (1) The intellectual training is more effective; since the boy or girl coming in competition with those of the same age is stimulated to greater exertions than would be possible in any system of home instruction. As Quintilian says, "At home, the boy can learn only what is taught himself: at school, he will also learn what is taught to others. He will hear many things approved; many others, corrected. The reproof of a fellow pupil's idleness will be a good lesson to him; as will, likewise, the praise of his neighbor's industry. He will think it disgraceful to yield to his equals in age, and great honor to excel his seniors. All these matters arouse the powers of the mind; and if ambition be an evil, it is often the parent of virtue." The child educated at home can never realize the full extent of his own powers, having no standard by which to measure them. Hence, he is satisfied with meager results, at the same time that he is likely to be filled with self-conceit. It is, however, scarcely disputed that the school, as a mimic world, presents a variety of incentives which a home education could never afford; and that it is favorable to rapid mental growth. But it is its influence on the moral nature that has been chiefly called in question. Home has been depicted as the abode of purity and innocence,—of kindness, gentleness, and affection,—of courtesy and refinement,—of morality and religious influence; and such it ought to be, and it is to be hoped, often is. From such an atmosphere, the home-bred child is at once introduced into a new, and to him utterly unknown, world. Instead of sympathy, he finds, among his school-mates, indifference; instead of courtesy and kindness, a thoughtless disregard of all weakness, either of mind or body, except, indeed, to turn it into ridicule. He finds that, if he is not mindful of himself, and sufficiently self-assertive, he will be borne down in the mass. There is an antagonism—an aggressiveness in those around him that begets caution and resistance; there is a sense of danger that cultivates courage, and a matter-of-fact spirit that crushes out egotism and sensitiveness. Thus the boy, in the little world of the school, is prepared for the greater school beyond. Probably, no better illustration of this fact is afforded anywhere than in the great Public Schools of England. Eton has been especially noted for the rough discipline to which its pupils subject each other; and yet we find the following cogent testimony as to the favorable effects of that system upon the boys' characters, from an entirely reliable source: "I think it cannot be denied that the tendency of the Eton system is to make a boy generous and firm-minded, to exercise his common sense early, to make him habitually feel a moral responsibility, to act not under the impulse of fear, but of generous shame and generous emulation, to be willing and determined to keep trust because he is trusted:—in a word, to make him a manly boy and a gentleman." (*Public School Education*, by Sir J. T. Coleridge, London, 1860.) It has been well said in regard to the corrupting influence of school, "School indeed brings the knowledge of evil, but the innocence of childhood is but the innocence of ignorance; by home education it cannot be much prolonged, and when knowledge comes at last, it finds less force of character and less strength of principle to counteract its poison." Better, therefore, it would appear, is it to unite the education of a good school with that of a properly ordered family, in which combination the evils of school life will be neutralized by the stronger and purer influences of home. Not home *or* school, but home *and* school, constitutes the proper agency for the education of children, whether boys or girls. It is the opinion of some, however, that admitting the advantages, in general, of a school education, that of home generates certain peculiar traits and excellencies of character which are essential to the welfare of society. This is the argument of Isaac Taylor, in *Home Education*, who says, "the school-bred man is of one sort—the home-bred man is of another; and the community has need of both; nor, as I think, could any measures be much more to be deprecated, nor any tyranny of fashion more to be resisted, than such as should render a public education, from first to last, compulsory and universal."

HOME LESSONS, or Home Studies. The question whether home lessons, or home studies, should be a part of the system of instruction in schools of different grades, and if so, to what extent they should be permitted, and in what manner they should be pursued and supervised by the teacher, is one of considerable importance, which is still extensively discussed by writers on education. The need of home lessons for pupils of secondary and higher schools has never been disputed. In regard to the schools of a lower grade, many physicians have strongly objected to any kind of home lessons, as long as the children are required to spend from 4 to 5 hours a day in the school room. Their arguments are, however, chiefly directed against the length of the school sessions. From an educational point of view, it has justly been urged by recent writers, that the regulation of this matter must chiefly depend on the question, for what purpose should home lessons be given. On this point, educators, at the present time, are much more nearly agreed than formerly. No writer of note will, nowadays, maintain that home lessons should be for the mere purpose of preventing idleness — of keeping the children busy, or as a punishment for delinquencies; but it is agreed that all home studies should aim at training the pupils to self-exertion, at giving them the ability to depend upon their own efforts as students, and by degrees, to dispense with the aid of a teacher. If this principle is accepted, several corollaries are self-evident. Home lessons should not begin at too early an age. Young children need the supervision of a teacher to a much greater extent than those of a more advanced age, and are much less fitted to spend their time profitably without direct guidance. Moreover, while the school sessions for young children are as long as for older ones, the medical warning not to overwork the brain, applies with much greater force to the home lessons of the former than to those of the latter. Special care should be taken that all the children fully understand the work which they are required to perform at home, and that they are competent to do it. No child of good standing in the class should feel it necessary to apply to his parents or adult friends for help. It is especially this point that is so apt to be disregarded by teachers. Parents have a right to object to any home lesson or exercise which requires, in the case of diligent pupils, any help in addition to that of the teacher. All exercises of this kind prove a torment, and are absolutely injurious. "The school", says Diesterweg, "must teach the method of home studies. It is not enough that the home lesson be appropriate in itself; the pupil must be enabled to prepare it in a proper manner. How often poor children torment themselves where this is not taught! The teacher should show them how to memorize, how to prepare or review a lesson, how to write a composition, by previously memorizing, preparing, reviewing etc., with them at school. Thus the teacher becomes the pupil's friend, and this is more than to be his master." Moreover, when pupils are required to write exercises at home, the teacher should faithfully correct them. The failure to do this fosters habits of carelessness. Many teachers greatly err in this regard, burdening children with the task of writing pages of exercises, and correcting but few, or none, of them. Certainly, no teacher who is guilty of so serious a mistake, can be regarded as understanding the work either of instruction or of discipline. Home lessons are, in general, more frequent in European than in American schools. The opinion is entertained by many European writers, especially German (as Rolfus and Pfister, *Realencyclopädie*, vol. I., art. *Aufgabe*), that home lessons are entirely unknown in American schools. Of course, this is not correct; but the views strenuously advocated by the best American educators, that home lessons should not begin early, and that they should occupy only a small portion of the childrens' time out of school are fully concurred in by the best educational writers of Germany. "Under the guidance of the teacher", says Diesterweg, "the attentive pupil will be able to learn at school, in one tenth of the time, what he is sometimes required to learn, when distracted and fatigued, at home. Thousands of pupils and parents become disgusted with the school, on account of the annoyance which they receive from the home lessons heedlessly assigned by the teachers; home lessons should, therefore, be restricted to the smallest possible amount; and the teacher, before assigning such a lesson, should ponder well the question whether just this lesson cannot be dispensed with, or be made unnecessary." Dittes (*Schule der Pädagogik*) is of opinion that the best arrangement for a common school is to confine all the learning of lessons to the school room, and to set apart special hours for study, under the direct supervision of the teacher. This, of course, is an extreme view; but it serves to illustrate the depth of the conviction that home lessons, as usually assigned, do not promote the real progress of the pupil. "The effect of poorly learning a lesson", says D. P. Page (*Theory and Practice of Teaching*), "is most ruinous to the mind of a child. He, by the habit of missing, comes to think it a small thing to fail at recitation. He loses his self-respect. He loses all regard for his reputation as a scholar. Besides, the attempt to acquire an unreasonable lesson, induces a superficial habit of study, — a skimming over the surface of things. The motto of the wise teacher should be, not *how much*, but *how well*. He should always ask, is it possible that the child *can* master this lesson, and probable that he *will*."

HOPE. See INCENTIVES, PRIZES, and REWARDS.

HOPE COLLEGE, at Holland, Mich., was established in 1851, by the Reformed Dutch Church, as the Holland Academy. It was organized as a college in 1863, and incorporated in 1866. Its especial design was to furnish a suitably educated ministry. It has an endowment of about $60,000. The library contains about 1,200 volumes. Three departments have been organized: (1) preparatory, (2) academic or collegiate, and (3) theological. In 1874—5, there were 9 instructors and 111 students. Rev. Philip Phelps, Jr., has been the president since the organization of the college.

HOPKINS, Mark, a noted American scholar and teacher, born in Stockbridge, Mass., Feb. 4., 1802. After graduating at Williams College, and serving as tutor in that institution for two years, he commenced the practice of medicine in New York; but, in 1830, returned to Williams College to fill the position of professor of moral philosophy and rhetoric, and, in 1836, succeeded Dr. Griffin as president of the College, in which position he remained until 1872, when he resigned to resume the duties of professor of mental and moral philosophy. He has published a number of works, all of which evince high intellectual and moral culture, as well as literary ability. Among them, that which illustrates best his peculiarly lucid mode of teaching difficult subjects is *An Outline Study of Man* (New York, 1873), which is a model of the developing method as applied to intellectual science, as well as of blackboard illustration.

HORN-BOOK, a book consisting of a single page, formerly used to teach children the alphabet and other simple rudiments. It was, in fact, the first page of the primer, pasted on a thin board, which terminated in a handle, and having, fastened over the printed matter, a thin plate of transparent horn, to protect it from being soiled or torn by the young learner. Usually there was a hole in the handle for a string, by which the apparatus was slung to the scholar's girdle. Hence, in a *View of the Beau Monde* (1731), we find a lady described as "dressed like a child, in a bodice coat and leading-strings, with a horn-book tied to her side". Sometimes, instead of being mounted on a board, the printed page was pasted on the back of the horn only. The horn-book was in use in England from the time of queen Elizabeth to the close of the eighteenth century; it was also used in some of the American colonies until about the same time. The oldest specimens contain the alphabet, in small letters and capitals — in black-letter or in Roman — commencing with a cross, which serves to designate the first row. This is followed by the vowels, and their simplest combination with the consonants, the Lords' Prayer, and the Roman numerals. (See CHRIST CROSS ROW). Before the horn-book was invented, it is thought, a cast-leaden plate was used in England, having on its face the alphabet in raised letters; as ancient carved stones have been discovered which appear to have served as moulds for casting such plates. There are many allusions in English literature to this little implement of elementary education. Shenstone in his quaint poem, the *Schoolmistress* (1741), thus refers to it:

> "Eftsoons the urchins to their tasks repair ;
> Their books, of stature small, they take in hand,
> Which with pellucid horn secured are,
> To save from finger wet the letters fair."

Cowper, in *Tirocinium, or a Review of Schools*, (1784), thus describes it:

> Neatly secured from being soiled or torn
> Beneath a pane of thin translucent horn,
> A book (to please us at a tender age,
> 'Tis called a book, though but a single page)
> Presents the prayer the Saviour deigned to teach,
> Which children use, and parsons—when they preach."

Locke, in *Thoughts on Education*, mentions the horn-book and primer as the "ordinary road" to learning to read in his time. (See PRIMER.)

HOUSE OF REFUGE. See REFORM SCHOOLS.

HOWARD COLLEGE, at Marion, Ala., was founded by the Missionary Baptists, in 1843. It has a library of about 2000 volumes, geological and mineralogical cabinets, and chemical, mathematical, and philosophical apparatus. The cost of tuition, board, etc. in the college department is $226 per annum. Theological students receive tuition free. The course of study is divided into the following distinct schools: (1) School of Latin; (2) School of Greek; (3) School of modern languages; (4) School of English; (5) School of moral science and theology; (6) School of mathematics; (7) School of chemistry, geology, and mineralogy; (8) School of natural philosophy and applied mathematics; (9) School of civil engineering; (10) Business school. There is, also, a preparatory department. The degrees conferred are B. S., A. B., M. A., and C. E., each of which requires proficiency in several schools. In 1874—5, there were 5 instructors and 102 students. The presidents have been as follows: S. S. Sherman, LL.D., H. W. Talbird, D.D., J. L. M. Curry, LL. D., S. R. Freeman, D. D., and J. T. Murfee, LL.D., the present incumbent (1876).

HOWARD UNIVERSITY, at Washington, D. C., was chartered by Congress in 1867, and named after Gen. O. O. Howard, one of its founders. It occupies a commanding and beautiful site at the head of Seventh street, north of and just beyond the city limits, and has several fine buildings. Though the institution was especially designed for colored youth, every department is open to all, without distinction of race or sex; and both white and colored persons of both sexes are found among its instructors and students. The university is supported by contributions and tuition fees. It has libraries containing over 8,000 volumes, a mineral cabinet, and a museum. The departments of instruction in connection with it are as follows: (I) *Academical branch*, consisting of (1) Normal department, with a model school; (2) Preparatory department; (3) College department. (II) *Professional branch*, (1) Medical department; (2) Law department; (3) Theological department. The normal department was, at first, supported by what was known as the Miner Fund. The medical students have the advantage of the Freedmen's General Hospital and Asylum, situated within the grounds of the institution. The theological department is open to students of every Christian denomination. The cost of tuition in the law department is $50 a year (or $40, when paid in advance); in the medical and theological departments, it is free; in the other departments, $12 per year. The number of instructors and students, in 1875—6, was as follows :

Departments.	Instructors.	Students.
Normal	10	34
Model school		141
Preparatory		39
College		33
Medical	8	24
Law	2	13
Theological	3	25
Total	23	309

Gen. Howard was president of the University till 1873, when he was succeded by John M, Langston, LL. D., as vice-president. In 1875, the Rev. Edward P. Smith was chosen president; and continued in office till his death, in 1876.

HOWE, Samuel Gridley, a distinguished American educator and philanthropist, particularly noted for his zeal and success as a teacher of the blind and the imbecile, was born in Boston, in 1801, and died in that city, in 1876. After graduating at Brown University, in 1821, he studied medicine for a time; but, becoming interested in the cause of the Greek patriots, he entered the revolutionary army, in which he served as surgeon till 1827. About this time, Dr. John D. Fisher, who while pursuing his medical studies in Paris, had become acquainted with the abbé Haüy's institution for the blind, proposed the establishment of a similar institution in Boston. Dr. Howe, who had returned to the United States for the purpose of soliciting contributions for the cause of the struggling Greeks, was invited to take charge of the proposed institution; and having accepted, he immediately embarked for Europe to visit the asylums for the blind in England, France, and Germany. On his return, the institution was organized, under the name of the Perkins Intitution for the Blind, with Dr. Howe at its head (1832). Here the education of Laura Bridgman (q. v.), a blind deaf-mute, under his personal instruction, attracted general attention, and placed Dr. Howe in the front rank of teachers; since only the most ardent zeal, and the most consummate skill, tact, and patience could have accomplished so difficult a task. He was also much interested in the education of the imbecile; and the experimental school for their training, which he helped to found, resulted, in 1851, in the Massachusetts School for Idiotic and Feeble-Minded Youth, in South Boston. He was the author of a *Reader for the Blind* (1839) and a *Historical Sketch of the Greek Revolution* (1828).

HUARTE, Juan, a Spanish physician and philosopher, was born in Navarre, about 1535, and died about 1600. He gave great attention to psychology, and particularly to the external physiological indications of character; and attempted to show the practical value of his system in education and otherwise, in his great work *Exámen de Ingenios para Sciencias* (*Test of Minds for the learning of the Sciences*), published about 1580, in which he gave directions for discovering the special talents of individuals for the acquisition of particular sciences. This book became very famous, and was translated into various languages. The English version was entitled the *Trial of Wits*. It taught that every person is endowed with a talent for some specialty, which should be discovered and cultivated; since whatever attention he might give to other pursuits, he could never rise above mediocrity in them. As a means of ascertaining this special gift, he laid great stress upon an examination of the form of the head, thus, to some extent anticipating the doctrine of Gall and Spurzheim.—See TICKNOR, *History of Spanish Literature.*

HUET, Pierre Daniel, a noted French scholar, born at Caen, Feb. 8., 1630, died at Paris, Jan. 26., 1721. He was a pupil of Descartes and Bochart, accompanying the latter to Sweden, in 1652. He also visited Holland, but returned to Caen and gave himself up entirely to study. He became Doctor of Laws, in 1670, and soon after, was summoned to Paris, where he was appointed sub-preceptor, under Bossuet, of the Dauphin. He directed, for his royal pupil, the preparation of the Delphin edition of the classics. In 1685, he was made bishop of Soissons, but was transferred to the see of Avranches, in 1692, which position he resigned in 1699, on account of ill health. His complete works were published in 1856, in 6 vols.

HUMANITIES (Lat. *humaniora* or *literæ humaniores*), those branches of education or study, which are included in what is called polite or elegant learning, as languages, grammar, rhetoric, philology, and poetry, with all that pertains to what is called polite literature, including the ancient classics. The name implies that the study of these branches, in opposition to the physical sciences, which especially develop the intellectual faculties, has a tendency to *humanize* man, — to cultivate particularly those faculties which distinguish him *as man*, in all his relations, social and moral; that is, which make him a truly cultured man. In the older systems of education, the humanities took the lead; in the new, they have been, to a considerable extent, superseded by studies deemed more *practical*, from a utilitarian point of view. The contest between the humanities and the so-called practical studies, as branches of higher education, is still rife. The humanities are, at present, more commonly designated *belles-lettres* (q. v.).

HUMBOLDT, Karl Wilhelm von, a distinguished German statesman, philologist, and, educator, brother of the great scientist, Alexander von Humboldt, was born June 22., 1767, died April 8., 1835. He studied at the universities of Frankfort on the Oder and Göttingen, and after holding several positions in the Prussian diplomatic and state service, was appointed, in January, 1809, chief of the educational department in the ministry of the interior, in which position he remained until April, 1810. This short period was fruitful of reforms in the educational affairs of Prussia; but it was especially in the fields of higher education that Humboldt's influence was felt. He prepared the way for, and thus became the real founder of, the University of Berlin, and also laid the foundation of the future greatness of the Prussian gymnasia. His reforms in the study of languages, in the schools of Prussia, exerted a far-reaching influence. His own linguistic works were of great importance, especially that upon *Kawi*, the language of ancient Javanese literature (*Ueber die Kawisprache auf der Insel Java*, 3 vols., 1836—40), still regarded as a classic on the philosophy of language. The introduction, which treats of the differences of languages and their influence upon the development of the human race, appeared in a separate volume (*Ueber die Verschiedenheit des menschlichen Sprachbaues, etc.*). — See STEINTHAL, *Die Sprachwissenschaft W. von Humboldt's* (1848); HEYM, *Wilhelm von Humboldt* (1856).

HUMBOLDT COLLEGE, at Humboldt, Iowa, was founded in 1869, by the Rev. Stephen H. Taft, but was not opened until 1872. It is non-sectarian, and is supported by voluntary contributions. Tuition is free to students to the number of 100. The college building is a beautiful marble edifice, erected at a cost of over $40,000. The library contains 1,300 volumes. It includes an English, a preparatory, and a collegiate course. In 1874—5, there were 4 instructors, and 97 students, of both sexes. Rev. Stephen H. Taft has been the president since the commencement of the institution.

HUNGARY, one of the principal divisions of the Austro-Hungarian Monarchy, is composed of Hungary proper, the former kingdom of Croatia, which, besides sending delegates to the Hungarian diet, has a provincial diet of its own, and the free city of Fiume. Its entire area is

125,045 sq. m., and its population, which, according to the census of 1869, was 15,509,455, was estimated, in 1875, at 15,993,196. The population of Hungary is made up of a number of different races, no single race having an absolute majority. These races differ not only in language, but also in dress and customs. According to estimates by Austrian statisticians, the races are divided nearly as follows: Germans, 1,780,000, forming 11.4 per cent of the total population; Slaves, 4,746,000, or 30.6 per cent; (nearly 16 per cent being Servians or Croats, and 12 per cent Slovacks); Italians and Roumanians 2,673,000, or 17.6 per cent; Jews, 553,700, or 3.5 per cent; Magyars, 5,553,700, or 35.7 per cent; and various other tribes amounting to about 199,000, or 1.2 per cent of the total population. The Magyars, though constituting considerably less than one-half of the population, are the ruling race, and are making strenuous efforts to introduce the study of their language into all the schools of the country. The former kingdom of Croatia and Slavonia, in which 94 per cent of the people belong to the Slavic race, preserves a certain degree of administrative independence; and the Croatian language is used in all the public schools. In 1869, the different religious denominations were represented as follows: Roman Catholics, 7,600,000; United Greeks, 1,600,000; United Armenians, 5,200; Protestants of the Augsburg Confession, 1,114,000; and of the Helvetian Confession, 2,031,000; Oriental Greeks, 2,590,000; Gregorian Armenians, 650; Unitarians, 55,000; other Christian denominations, 2,600; Jews, 553,700; other non-Christians, and persons of no religion, 220. The ruling race of the country, the Magyars, were a Mongolian tribe, that took possession of Hungary in 894. Christianity was introduced under Duke Geysa (972—98), whose son Stephen was crowned king by the Pope. In 1526, a part of the country was conquered by the Turks, and the remainder was annexed to Austria, with which country it has been connected ever since. In 1849, it was deprived of its ancient constitution, and converted into a crown land or province of the Austrian empire; but, in 1867, its constitutional independence was restored: and, since that time, it has formed one of the two main divisions of the Austro-Hungarian Monarchy. In consequence of the numerous civil wars, the oppression by foreign barbarians, and the conflicting tendencies of the rival races and religions, the progress of education in Hungary has been slow. The numerous German settlements of the 12th and 13th centuries, even in the darkest hours, never failed to make provision for the education of their children; and when the majority of these settlements, in the 16th century, joined the Augsburg confession, their schools were benefited by their closer connection with the states of Germany. It was thus that the Cronstadt gymnasium was founded in the latter part of the 16th century, that gradually the city schools in various places were raised to the rank of gymnasia, and that scarcely a community of the Augsburg confession was without a common school. The same was also true of most of the communities of the Reformed Church. The elementary education of the Catholics in the German settlements, was not so well cared for; but numerous gymnasia were founded by the Jesuits in the Hungarian countries, which grew quite rapidly. Very little was done for the cause of education by the government, until Maria Theresa appointed a commission on schools and studies, in 1774. The whole country was divided into nine districts. The provincial director, who presided over a district, had charge of all the schools, with the exception of the national university, the gymnasium of Buda, and the episcopal lyceums. In 1778, the inspectors of the Catholic common schools met in Buda, and consulted on a plan, called the *projectum Budense*, to organize these schools. In accordance with this plan, a normal school was immediately established in every district, and common schools were to be erected as soon as possible in every parish. In the village schools, instruction was to be confined to reading, writing, and arithmetic, with German, if desired; while, in the city schools, a knowledge of German was considered necessary for all the scholars. The schools of non-Catholics were to be gradually incorporated with the system. In 1780, the empress gave to the schools the property of the Jesuits, amounting to about 10,000,000 florins; but, owing to the peculiar circumstances which existed under Joseph II., this large sum did not immediately produce the expected result. Joseph II. attempted a number of radical reforms; but most of them had to be abandoned, even before his death. A commission, however, appointed by the *Reichstag*, drafted a new law, which was adopted in 1806. According to this law, every Catholic community was to have a national school, with one or two teachers; while 73 cities were to have upper schools, with three or four teachers. The ten normal schools were to serve at the same time as schools for teachers. The 60 gymnasia were divided into 54 full gymnasia, with six classes, and 6 of four classes each. After the death of Joseph II. the Protestants refused most determinedly to introduce this new law into their schools, and Catholic children were prohibited from attending Protestant schools without the consent of the priest. A new era began when, in 1850, the Hungarian lands became an integral part of the Austrian monarchy. Attention was, at first, given to the elementary schools. New schools were erected, the condition of the teachers was improved, and existing schools were enlarged. Teachers were procured at great expense from other countries. Under the newly appointed district officers, the school attendance increased rapidly. The long interruption of school sessions, generally from March till November, was abolished; and penmanship, drawing, and music were introduced, for the first time, into Hungarian schools. An entirely new idea were the Puszta or Fanya schools, which were designed to furnish instruction to the numerous children living on the great plains in houses far apart from each other, and whose parents were chiefly engaged in herding horses for the nobility. After the re-establishment of the Hungarian independence, a new school law was promulgated, in 1868, which has greatly promoted the advance of education.—

Primary Instruction.—Education, according to the new law of 1868, is compulsory for all children from the sixth to the fifteenth year. The primary schools are divided into elementary and higher people's schools, burgher schools, and preparatory schools for teachers. The different religious denominations may establish public schools of their own, if they comply with the general requirement of the school laws. Private persons or associations may also establish elementary and normal schools, if the teachers hold proper certificates. These schools may become public schools by complying with the provisions of the school laws. Every private school, however, must conform to the course of instruction prescribed by law for schools of the same grade. Every community in which denominational schools exist, and in which there are as many as 30 children of other denominations, must provide an elementary school. The elementary school is composed of two courses,— a common school course, of six years, and a review course, of three years. The school year must comprise, in the country, at least eight months, and in the cities, nine months. The course of study comprises religion, reading, and writing, arithmetic, languages, geography, and history, natural philosophy, natural history, music, gymnastics, and practical instruction in gardening and farming. Every child must be instructed in his mother-tongue. Wherever there is a large number of people speaking different languages, teachers of those languages must be employed. All cities of more than 5,000 inhabitants must establish at least a higher people's school; and, if their means suffice, a burgher school. In these schools, boys and girls must be instructed separately, and in their own language. The course of study comprises religion, penmanship, and drawing, the mother-tongue, the Hungarian language, where it is not the medium of instruction, mathematics, natural history and natural philosophy, geography and history, the elements of agriculture, constitutional history, book-keeping, gymnastics, and singing. In the schools for girls, agriculture, constitutional history, and gymnastics are omitted, needle-work beeing taught instead of them. In the burgher schools, the boys' course comprises six years; and the girls' course, four years. In addition to the studies pursued in the higher people's schools, chemistry, statistics, and the elements of law are taught in the burgher schools. In some of the larger schools, Latin, French, music and other branches are taught as optional studies. The course in the normal schools comprises three years. A model training school is connected with every normal school. The schools are under the direct authority of the communities, each one of which elects a committee of, at least, nine members. The whole country is divided into school districts, for each one of which the ministry appoints an inspector, who must superintend all the schools in his district, and visit them, at least, once a year. He sees that the laws are properly enforced, and makes an annual report on the condition of the schools in his charge. Subordinate to the inspector is a school councilor. Teachers are appointed, either upon graduating from a normal school, or upon passing a proper examination. A school law for Croatia was passed by the Croatian diet, in 1874, of which the principal provisions are as follows: The state has the control of the entire school system. School attendance is compulsory and free. Instruction is imparted in the Croatian language; but other languages may be used as the medium of instruction, where they are spoken by the inhabitants, if the community supports its own school, and the inhabitants are ignorant of the Croatian language. In all such schools, the study of the Croatian language is obligatory. The school age extends from the eighth to the twelfth year inclusive. Female teachers may be appointed in lower classes of the common school in case of need. Burgher schools for both sexes are substituted in place of the real schools which formerly existed in connection with the head schools. Pupils may enter the teachers' seminary upon completing their fifteenth year. The course of instruction comprises three years.

In 1873, there were, in all the lands of the Hungarian crown, 15,445 schools, of which 1,542 were communal schools, and 13,903, denominational schools. In the same year, there were 801 communities without any school at all, and the children of which could not even attend neighboring schools, on account of distance. The day schools were attended by 1,174,427 children (637,193 boys and 537,234 girls), the review schools by 231,530 (123,512 boys and 108,018 girls), the higher people's schools by 10,104 (6,243 boys and 3,861 girls), and the private schools by 23,534 (10,905 boys and 12,629 girls), and the intermediate schools by 13,671 boys, making a total of 1,443,266 children receiving instruction. On the other hand, 678,154 (318,420 boys and 359,734 girls), or nearly 40 per cent of the children of school age, received no instruction. The total number of teachers in the same year was 19,598, of whom 15,149 were licensed. The number of normal schools was 57; of which 15 were state and 32 denominational schools for male teachers, and 4 state and 6 denominational schools for female teachers. These schools were attended by 2,371 students (1,877 males and 494 females. The number of teachers was 510, and the total number of classes 154. In 1875, there were 6 higher people's schools for boys, with agricultural courses; 1 with a course of gardening and grape culture, 1 with a carving school, and 1 with a trades' school; 9 for both sexes, 29 burgher schools for boys, and 8 for girls. A higher female school in Buda-Pesth, and two state seminaries for female teachers, in Buda-

Pesth and in Raab, were established in 1875. Buda-Pesth, the capital of Hungary, had, in 1873, 51 communal, 2 government, 18 denominational, and 49 private schools. The school population was 51,532. The day schools were attended by 27,864, and the review schools by 4,726 pupils, making in all about 79 per cent of the school population. The courses for adults were attended by 1,922 pupils, and the trade school, by 1,510 pupils.

Secondary Instruction.—Secondary instruction is imparted in gymnasia and real schools, which correspond to the institutions of the same name in Germany. In 1872, there were 147 gymnasia, with 1,842 teachers and 27,360 students. Of these, 20,775 were Magyars, 2,418 Germans, 2,195 Roumanians, and 1,863 Slaves. The number of real schools, in the same year, was 31, with 315 instructors and 5,803 students, of whom 3,815 were Magyars, 1,530 Germans, 326 Slaves, and 115 Roumanians. The Hungarian language is taught in all these schools. In Hungary proper, it is the medium of instruction in all secondary schools; though in some, one or more other languages are also used for some branches of instruction. In Transylvania, the medium of instruction is German in the Roman Catholic gymnasia of Hermannstadt and Cronstadt, and in all schools belonging to the Evangelical Church; Roumanian, in the gymnasia of the Greek Church; and the Hungarian language, in all other schools.

Superior Instruction.—There are three universities in Hungary: in Buda-Pesth, in Klausenburg (founded in 1872), and in Agram (founded in 1874). The university of Buda-Pesth had, in the winter term of 1875—6, 150 professors and 2,630 students. Klausenburg had, in the same year, 61 professors and 417 students. In the University of Agram, 270 students were admitted, upon its opening, in 1874; but, in 1875—6, the number of students was 319, and that of professors, 31. The universities of Hungary have substantially the same organization as those of Germany and of Austria proper.

Special Instruction.—Hungary had the following special schools in 1875: A royal polytechnic institute, in Buda-Pesth, with 57 professors and 862 students; 9 royal, and 4 evangelical law academies, a commercial high-school, in Buda-Pesth, a royal agricultural academy, in Altenburg, 4 other agricultural academies, in Debreczin, Keszthély, Kaschau, and Klausenburg, the royal academy of forestry, in Schemnitz, the Croatian school of agriculture and forestry, in Kreuz, 5 lower agricultural schools, 3 schools of vine-culture, a royal mining academy, in Schemnitz, 2 lower mining schools, an academy of music, in Buda-Pesth, a royal school for the education of officers of the *landwehr* cavalry, in Jászberény, the Ludovica Academy in Buda-Pesth, for the *landwehr*, a preparatory school, in Günz, and a naval academy in Fiume.—See SCHMID, *Encyclopädie*, vol. v., s. v. *Austria*; KLUN, *Statistik von Oesterreich-Ungarn* (1876); BRACHELLI, *Statistische Skizze der Staaten Europa's* (1875); and *Statistische Skizze der Österreichisch-ungarischen Monarchie* (1874), being a supplement to STEIN and WAPPÆUS, *Handbuch der Geographie und Statistik*.

HYGIENE, School, has reference to that department of school administration, which pertains to the preservation of physical health. This is to be distinguished from physical education, which looks rather to the special training or developing of the body; while hygienic principles and rules have for their object to preserve that condition of health in which all pupils are supposed to enter school, and, by their constant though unobtrusive influence, to make that condition permanent. The value of the maintenance of physical health will hardly be questioned by any thoughtful person, certainly not by any educator; for while the mind does sometimes, indeed, appear to act independently of the body, there are numerous instances on record which show that not only intellectual inefficiency is directly traceable to ill health, but moral obliquity also. If the effect of positive disease, therefore, becomes so evident in specific instances as to reveal this direct connection, the cases in which that connection is obscure, and the effect apparent only in a general way, must be numerous. Illustrations of this are not wanting in the experience of every observing person. So well established has this connection become, and so important, consequently, has the subject of physical health in education been deemed, that no prominent educational writer has failed to notice it.

The subject of the preservation and promotion of physical health in the school involves the following considerations: (1) the character of the site on which the school building is erected; (II) the mode of constructing the building, as well as the location and construction of the outbuildings,—water-closets, etc.; (III) the construction and arrangement of the class-rooms; (IV) the size, number, and distribution of the windows for the admission of light; (V) the mode of ventilation; (VI) the manner of heating the rooms, and the average temperature preserved in them by artificial heat; (VII) the adaptation of the school furniture to the physical wants and condition of the children; (VIII) the kind of discipline employed, in regard to hygienic principles; (IX) the degree of attention given to the personal condition of the pupils, so as to preserve cleanliness and prevent the communication of disease; and (X) the means afforded for physical exercise. Each of these will be considered in its order, according to the above enumeration.

I. *Site.*—Modern sanitary science, fortunately, has given such particular attention to the subjects of site and exposure, and has impressed the public mind so thoroughly with the necessity of their healthfulness, that only willful ignorance or obstinacy will, in our day, permit a building designed for human occupancy to be placed in a manifestly unhealthy location. The healthfulness of a school site depends upon (1) the character of the soil; (2) its elevation; (3) the circumstances which facilitate or obstruct proper drainage; (4) its remoteness from any stagnant water, or marshy ground, liable to produce malarial fevers; (5) its remoteness from any factory or establishment poisoning the air by the issue of deleterious and offensive gases; to which may be added (6) the amount of space it affords for play-grounds, so as to facilitate physical exercise.

While no school board or committee would err so far as to place a school-house in a situation decidedly unfavorable in regard to any of these considerations, there exist between this and a decidedly healthy location, all manner of intermediate situations, which call for the exercise of good judgment, and even a knowledge of medical and sanitary science, in deciding upon their fitness as sites for schools. In the country, the difficulty is usually simplified by the greater opportunities for choice, and the undisturbed, natural condition of the ground. In cities, however, the choice is necessarily restricted; and the best judgment will often be at fault in regard to the nature of the ground, this being frequently "made ground", *i.e.*, ground formed by bringing earth from a distance, and depositing it over spots originally low and swampy; or the filling itself may be composed of refuse and garbage which are destructive of health. A scientific test of such ground will ordinarily show a slow oozing up, through the soil, of poisonous gases. Modern examinations, also, as to the distribution of diphtheria, fever and ague, and some other diseases, show that these usually follow the lines of old water-courses. The leakage of sewers and gas-pipes is another insidious foe which the dwellers in cities have to encounter. The choice of location, therefore, should always be such as to avoid these influences so hostile to health. The soil should be, if possible, light or sandy, or a coarse gravel, since clayey soil holds the rain, and soon causes wet feet, with all their accompanying diseases; while the vegetable matter, decomposed by the sun and standing water, frequently gives rise to consumption, and fevers of various kinds. If such a soil must be used, there should be a sloping surface, or, if unavoidably level, nothing short of the most thorough draining should be tolerated.

II. *Construction of School Building.*—The construction of the school building will depend on the number of pupils to be accommodated; the kind of school, as regards the sexes; and the grade,—whether primary, grammar, or high school. (See SCHOOL-HOUSE.) In regard to water-closets and urinals, it is hardly necessary to say, that they should, for convenience, be as near the school-house as possible, without being near enough to allow the perception of any odor. The approaches from the school-house should be under cover, the ventilation and the supply of light should be ample. They should also be enclosed from observation.

III. *Construction and Arrangement of Class Rooms.*—This varies with the conditions under which the school-house is built. The rooms, however, should always be constructed so as to allow at least 108 cubic feet of air space to each pupil, and 9 square feet of floor-space. The height of ceiling recommended by the best authorities is a minimum of 12 feet and a maximum of 15 feet, if the room is not very large. These provisions are absolutely necessary to furnish to each pupil the amount of air necessary for health. (See VENTILATION.)

IV. *The Size, Number, and Distribution of the Windows.*— On this subject, Currie, in *School Education*, remarks: "The provision for lighting a school should have two ends in view: (1) a proper amount of light, and (2) its just distribution. The effect either of an excess or a deficiency of light is to strain the eye and cause a depression of spirits, especially as the day advances. In regard to distribution, all the parts of the school should be equally lighted, which may be more easily done with a few judiciously placed windows of respectable size than with a number of smaller, straggling apertures. Good ways of lighting a school are these: (1) Perhaps, the best of all is when the light is admitted from the roof, as it is then steady, equable, and free from shadow. (2) The windows may be placed in the ends of the school room, or in two adjacent sides, so as to admit the light from the pupil's left. Where there are windows in front of the classes, they should be at some distance from them, and in every case they should be at such height in the walls as to remove all danger from drafts when they are opened. School windows should be of the same shape as ordinary house windows; at any rate, lattice windows, with numerous, small, lozenge-shaped panes of glass should be avoided, as the light transmitted through them is so broken as to be extremely fatiguing to the eye. (3) Each window should be fitted with blinds to moderate the intensity of light, when necessary, particularly to exclude the direct rays of the sun. If the windows are used for ventilation as well as lighting, the difficulty of using the blinds in such a case may be obviated by having a fixed Venetian blind outside the window at the top, and hanging the inside blind on a level with the bottom of it. (4) The tint of the school walls should neither be too dull, so as to absorb the light unduly, nor too glaring, so as to dazzle the eye by reflection. Of the colors commonly employed; namely, the white, the ocher, the stone color, and the lightish-brown, the last two are obviously to be preferred." If the lighting of the school room is from the roof, care should be taken that the windows or sky-lights should not slope to the south or west, as the heat and sunlight will be intolerable in hot weather, and their regulation by blinds will be difficult. If the lighting, on the other hand, is by side windows, "the height of the window sills from the floor," says Robson, "should always be considerable, and the heads near the ceiling. Much of the cheerfulness of a school room, especially in a town, depends on the amount of sky which can be seen from the windows. The height of the sills from the floor, therefore, should never be less than five feet, and may be even more with advantage. This will enable the top or head to be placed nearly, if not quite, up to the ceiling, and then the upper stratum of vitiated air can be more readily removed." The importance of this subject in regard to health is very great. Liebreich, in his report to the College of Preceptors of London (July, 1872), attributes several diseases of the eye to this cause alone; and Dr. Cohn asserts that of 410 students examined by him, only one-third possessed good eye-sight, the remaining two-thirds having had their sight injured, in his opinion, by the deficient lighting of the school rooms in which they studied. A rough calculation, from researches made on the subject, gives 200 square inches of window glass as the proper number for each scholar. In the above remarks by Currie, the left side has been designated as the one from which the light should come, because this ensures the fullest illumination of the page, with the least inconvenience, and the least injury to the eye. When light is admitted through the front of the room, the glare is directly in the face either of teacher or pupils, they being supposed to face each other. If it falls from behind, the shadow of the head is thrown directly upon the page; if from the right side, the shadows of the arm and hand, in the act of writing, equally obscure it. The light, therefore, should fall from the left side, and, as far as possible, from above. In evening schools, the lighting should be, as nearly as possible, equal to that by day. If gas is used, the glass cylinder with a reflecting shade is recommended, for the purpose of steadying the light and making it stronger and whiter. Ground glass shades are now generally discountenanced, their effect being to diffuse the light. For general illuminating purposes they are desirable, as in the parlor or concert room; but are out of place in the school room, or in any room where the object is to concentrate light upon a particular spot.

V. *The Mode of Ventilation.* See VENTILATION.

VI. *Mode of Heating, and Temperature.*—Many methods, based upon ingenious theories and provoking heated discussion, have been adopted to overcome the difficulties attending this subject; but it is, probably, not unfair to say that an entirely unobjectionable heating apparatus, as regards health, has yet to be devised. Wood is, of course, too dear for general use. The ordinary stove, the cellar furnace, and all devices for warming air by passing it over heated metal surfaces are now entirely discountenanced, it having been discovered that a highly poisonous gas is set free, and passes through heated metal as through a sieve. The steam coil, placed outside of the school room and heating a column of air which is drawn from the outside, and, after heating, ascends into the room, has, of late, been extensively used. At the opposite end of the room, a grate, varying in size with that of the room, is placed; the theory being that, as the heated air ascends in one end of the room, the cool and foul air is forced out at the other through the flue of the grate, in which a fire is usually kept to facilitate the current. This method, while perhaps the least objectionable of any, has been opposed on the ground, that by it the stratum of air nearest the ceiling is kept warmest, while that nearest the floor, which should be the warmest, is least so. To obviate this difficulty, it has even been proposed to make the floor of stone and warm it after the manner of an oven, *i. e.*, by kindling a fire under it. Whatever method is adopted, however, fluctuations of temperature should, as much as possible, be avoided, and the air of the room should be kept steadily at from 65 to 70 degrees.

VII. *Furniture.*—Several diseases have been traced to faultily-constructed school furniture, chief among which is curvature of the spine, with the diseases consequent upon it. This is sometimes the result of insufficient lighting; but more frequently it arises from the improper construction of the desk and seat, or the arrangement of them. (See SCHOOL FURNITURE.)

VIII. *Discipline and School Management.*—The methods of discipline which militate against bodily health are fortunately growing less in every civilized country, as more study is given to the subject of education. It may be said briefly that whatever discipline tends to bodily deterioration in any way should be discountenanced, as the object of discipline is to train, not to break down. (See DISCIPLINE.) Of the errors, under the head of school management, which affect health may be mentioned those which arise from (1) *the length of the daily school session.* These errors are frequently due to the fact that courses of study are laid down first, with the view of accomplishing a certain result, and the pupils' powers are made to conform to them. By this inversion of the natural method, sessions of five and six hours, with only slight intermissions, are sometimes ordered; this can result only in physical injury. The reversal of this, *i. e.*, a study of the child's physical necessities first, and a school course based on them, will insure the adoption of the only safe and reasonable method consistent with health. This should be so arranged, by a judicious alternation of sedentary occupations, physical exercises, and recesses, that no "violation of the primary laws of physiology", as Prof. Owen terms it, may be possible. In a room supplied with proper hygienic facilities, four hours per day is thought to be the maximum for very young pupils, and five hours for older ones. (2) *The number, length, and distribution of recesses* must vary with the different ages of the children to such an extent, that the only practicable guide for their regulation must be found in the discretion of the teacher. It may be said, in general, however, that the weariness of the pupil, which is shown by his restlessness and want of attention, furnishes the best indication of the time when the ordinary text-book studies should be superseded by physical exercises, or by the absolute recreation of the play-ground. In tropical climates, the middle of the day, for exercise of any kind, should be avoided. Nature, however, has pointed this out so unmistakably, that there is little liability to error. (3) *The number, length, and distribution of vacations* are, in a general way, governed by the same consideration that prescribes the number, length, and distribution of recesses; namely, the freshness, both mental and physical, of the pupil, with such modifications as may be suggested by climate, prevailing contagious diseases, or other conditions. The tendency, of late years, in the United States, has been to begin the school session about the first of September, and to continue it uninterruptedly —with a slight intermission of a week during the holidays — till the following June or July. By this arrangement, a long, continuous vacation is insured during the warmest season of the year, when, it is claimed, rest is most needed. It has been objected to this, and perhaps with reason, that the heat of the summer months renders them unfavorable for that outdoor exercise which is most needed for the recuperation of the system, and that the health of pupils would be promoted rather by confining them indoors. As long, however, as the summer heats are avoided by a flight to the sea-shore or the mountains, this practice will probably prevail; and though it may be said that the poor of cities, who are by far the largest patrons of the public schools, cannot afford to leave the city for summer retreats, it must be remembered, on the other hand, that the greater prevalence of fatal diseases in cities, during the summer months, renders a vacation desirable even in their case. (4) *The regulations of the school* may, by their severity, seriously interfere with bodily health, by checking or entirely repressing that activity which is so marked a characteristic of childhood and youth. Reid, in his *Principles of Education*, says," There is nothing in which parents are often more tyrannical and unreasonable than in expecting children to be quiet and good, and give them little trouble, when they will not put themselves to the least trouble to find suitable occupation for the active and restless faculties of their children. The trouble that a child gives to those in charge of it, should very often be viewed as an effort of nature to recall them to their neglected duty." *The degree and kind of restraint*, exercised over pupils, therefore deserve careful consideration. In this connection must be condemned all those restrictions which repress, for any considerable time, that innate activity which is a necessity of the child's very being, and the repression of which, though not immediately and actively productive of disease, becomes passively so by the condition of atrophy which it tends to produce. Want of exercise is frequently as inimical to health as excess of it. *The number and length of lessons*, also, by their excess may become physically injurious. "With young children," Currie says, "a lesson should not average in duration more than a quarter of an hour, and on no account exceed twenty minutes. It is hard enough to sustain the attention, even for this period; and no child will be able to retain more than we can tell him within it. The teacher should subdivide his lesson rather than trespass beyond this limit. Lessons of different kinds, *i. e.*, occupying different senses, should follow each other; this is a great relief. It is absurd to speak of these frequent changes as causing loss of time". Excitement and overwork, also, should be avoided. The same general directions, however, given in regard to the number and length of recesses, are applicable here. The lessons assigned by the teacher and studied in his presence may be easily directed; but those which are pursued at home should receive equal attention. (See HOME LESSONS.)

IX. *Personal Condition of Pupils.*—(1) Cleanliness, being a necessary condition of health, should be strenuously insisted upon. Cleanliness of *the person* will sometimes be found, especially in schools among the very poor, to be neglected. The danger of the outbreak of disease, or of its communication from this source, is always great in large schools; and, therefore, the frequent use of the lavatory, in such cases, is necessary. Cleanliness of *clothing* is no less necessary to prevent the communication of disease. Realizing the neglect of a proper care of the clothing, natural to children through thoughtlessness, many school boards have made the daily dusting and brushing of clothes by the pupils a part of the school routine. In Germany, this is often insisted upon, and the necessary provision made at the expense of the school. Cleanliness of *habits* is a no less essential condition of good health, and should be watched, as far as may be, and enforced with a view to the prevention of ill health. (2) It frequently happens that *diseases*, more or less contagious in their nature, break out in schools, and lead to the closing of the schools for a time, with sometimes more serious results. In many cases, these could have been prevented, or confined to the original case, by a proper precaution on the part of the teacher. Ophthalmia, hooping-cough, scrofula, scarlet fever, small-pox, and skin diseases, whether of the head or the body, are cases of this kind. A slight knowledge of the symptoms should apprise an intelligent teacher of the danger at once, and secure the removal of the case to the home or the hospital. (3) *Vaccination*, as a preventive of small-pox, should receive attention. The efficacy of this is now so thoroughly established, that a majority of public schools do not hesitate to employ it, notwithstanding the objections often urged. When the disease becomes epidemic, if the pupil has never been vaccinated, the operation should take place at once; if he has, proof should be required, either in the shape of marks, or a certificate, which should establish three facts: that the operation was performed by a competent and responsible person, that it was effective, and that it was done recently enough to insure its efficacy in averting disease at the time the proof is required.

X. *Physical Exercise.*—That this is one of the most effective of all agencies in preventing disease, is now generally admitted, though the excess to which it is often carried in our day has, for some time, been creating a reaction against it. The phase of the question which calls for attention here, is its use not so much as a means of development, as in promoting health. On this account, one of the most important accessories of the school-house is the *play-ground*. Whether this is used as a place for continuing the discipline of the school room, or simply as a spot where children may be absolutely free to pursue their games, its size, location, and exposure should be carefully considered. If the plot on which the school-house stands is large, but entirely, or almost entirely, surrounded by other buildings, the planting of shade trees around the limits of the enclosure is recommended, in order to give seclusion. These should never stand, however, so near the building as to exclude light, or cause dampness. Robson says in regard to this, "The play-ground should not be of a straggling, inconvenient form, but compact and without recesses or places where children can remain long out of sight. A northerly or easterly aspect should never be wantonly provided when a southerly or westerly one could have been as easily obtained by no other outlay than that of a little common sense. A portion should be covered, so that in wet weather the children may not be compelled to play in their school rooms. In the case of infant schools, this covered portion is absolutely indispensable, as already shown, because marching forms so important an element in their preparatory instruction. It can generally be obtained in the form of a light shed open on one side; but, in some cases, and where land is dear, it may be convenient to raise the boys' and girls' schools on a low story of eight to nine feet high, and thus to obtain some portion of the covered play-ground underneath. In such cases, care will be required to prevent a cold, drafty result. As to the size of play-grounds for different schools, it is difficult to be precise. On account of their more active out-door games, requiring space, the boys should undoubtedly have the lion's share, while the infants—too young to develop all the uses of a play-ground—will be happy in one much more limited. Perhaps, a space of about twice the size of the school room and class rooms is necessary for the latter. Where land is dear, and in consequence limited, one play-ground may suffice both for the girls' school and the infants', an arrangement being made by the respective mistresses for its use at separate times. Without such arrangement, there is risk of disorder, no *one* being responsible for the discipline of *all*. If there are two infant schools or departments on the same site, the girls should be provided with a separate play-ground, because then the numbers are sure to be too great for one." By what means these play-grounds should be separated, is still a matter of discussion, different methods being employed in different places, with, thus far, equally satisfactory results.

In dismissing the subject of school hygiene, it may be said that the influence of school life on physical health, if properly managed, is not only not injurious, but positively beneficial. This might be inferred, *a priori*, from the fundamental law of existence. It is amply confirmed, however, by actual statistics. Efforts to prove the contrary have been made by inferences drawn from false premises based on over-exertion, and many erroneous theories prejudicial to the cause of education have thereby become prevalent. The interaction of mind and body, however, is not only an established, but a conceded fact; and just as surely as the body, by proper exercise, contributes to the efficiency of the mind, so surely does the mind, by duly regulated action, contribute to that of the body. The annals of medical science confirm this in the most unmistakable manner. The difficulty is to assign to each its proper amount of exercise. On this point, differences will probably always exist; but the foundation has been carefully and substantially laid; and, each year, by increased interest, refinement of processes, and patient investigation, something is added to our knowledge of this most important subject, and the probability of our possession of a school course capable of accomplishing the great desideratum of modern life—a true education—is more assured.—See Currie, *Principles and Practice of Common-School Education* (Edin. and Lond.); Robson, *School Architecture* (Lond., 1874); Pappenheim, *Handbuch der Sanitäts-Polizei*, nach eigenen Untersuchungen bearbeitet (2 vols., Berlin, 1858—9); Siegel, *Die Schule und ihr Einfluss auf die Gesundheit* (1868); Passavant, *Ueber Schulunterricht vom ärztlichen Standpunkte* (1868).

IDAHO was organized as a territory March 3., 1863, being formed from portions of Dakota, Nebraska, and Washington territories, and including then the present territory of Montana and nearly all of Wyoming. Its present area is 86,294 sq. m.; and its population, in 1870, was 14,999.

Educational History.—Soon after the organization of the territory, provision was made for the support of public schools, and a school system was established. In 1866, the number of pupils enrolled in the schools of eight counties was reported as 436, out of a school population of 792 children, between five and eighteen years of age. The whole number of children of school age in the territory was estimated at that time as 1500. Up to 1870, little progress had been made, the census returns showing only 466 pupils attending the schools of the territory. The whole number of school children in the territory, between the ages of five and twenty-one, in 1871, was 1,596; in 1872, 1,909; in 1873, 3,473; and in 1874, 4,010.

School System.—The school law has been repeatedly changed. That at present (1876) in force was passed in January, 1875. Its leading provisions are the following :—

The territorial controller is, *ex officio*, territorial superintendent of public instruction; and his duties are, to exercise a general supervision over the public schools of the territory, to prepare blanks for reports of county superintendents, trustees, teachers, etc.; to apportion the school fund; and to make a detailed report to the legislative assembly at each of its regular sessions; also to present such suggestions as he may deem necessary, in relation to the construction of school-houses, the management and support of the schools, the qualifications of teachers, and the promotion of the general interests of education throughout the territory. The other officers who perform duties directly connected with education are the county superintendents and the trustees of schools. The auditor of each county is, *ex officio*, county superintendent, whose duties are, to apportion the public school money among the school districts, on the first Monday in March, and quarterly thereafter; to distribute, on behalf of the territorial superintendent, blanks, reports, etc., for the use of the school trustees, census marshals, and teachers; to keep on file reports from school trustees etc.; and to make an annual report to the territorial superintendent, stating the number of school-houses in each district of his county, the number of children of school age, the number of pupils attending school, the number of libraries and books therein, the school books used, the amount of money paid for teachers' salaries and other school purposes; to appoint trustees to fill vacancies, and to organize new school districts on the application of the inhabitants of the same; also to modify the boundaries of school districts; and to receive and file all school election returns. Three trustees of schools are elected annually in each district, who hold office for the term of one year. Their powers and duties are to employ and remove teachers, and to fix the salaries of the same; to visit the schools as often as once in each month; to take charge of all the school-property in their respective districts; by vote of the district, to convey by deed any school house or site, also to purchase real estate for the use of the schools; to call meetings of the inhabitants to decide upon the levy of any special tax that may be required in order to defray the expenses of the schools; to examine and license teachers; and to appoint a census marshal to make the enumeration of the children in the district. No books, papers, tracts, or documents, of a political, sectarian, or denominational character are permitted to be used in any of the schools.—Teachers, before receiving a certificate of license from the trustees, must pass an examination in orthography, reading, writing, arithmetic, geography, English grammar, and the history of the United States.—The legal school age is from five to eighteen years.

School Statistics.—In 1874, the whole number of school-districts in the territory was 77; and the number of school-houses, 53. There were 3 libraries, containing 198 volumes. The number of children, between five and twenty-one was 4,010; and the school attendance was 2,030. The whole amount of money received was $31,064.33; and the amount expended, $21,789.

School Fund.—All moneys accruing from the sale of lands given by Congress for school purposes, and all moneys appropriated by Congress for school purposes in the territory, are to be devoted to the establishment of a university or other high school. Moneys obtained by legacy, donation, escheats, etc., constitute an irreducible and indivisible general school fund, the interest of which is apportioned among the counties. The county school fund is obtained by a tax of not less than two, or more than five, mills on each dollar of taxable property in every county. All moneys arising from fines for a breach of the penal laws of the territory are set apart by the county treasurer as a part of the county school fund.

Measures were taken in July, 1874, to establish in Boise City a university, to be known as the Idaho University. Provision has been made for this institution in the new school law.

IDIOTS, Education of. The term *idiots* is applied to those who, in different degrees, are deficient in intellectual power and activity. A more general designation, however, of this class of unfortunates is that of *the imbecile*, or *feeble-minded persons;* since *idiocy* is usually employed to denote an extreme degree of mental deficiency. The first attempt, so far as is known, to instruct idiots was made by St. Vincent de Paul in the 17th century, and by the philosopher Itard, the friend and disciple of Condillac, at the close of the 18th century; but the efforts of both were limited to a few isolated cases, and did not lead to the establishment of any permanent school for idiots. Dr. Itard committed the facts which he had gathered to his pupil Dr. Seguin, who made the study of idiocy a specialty. The subject had, in the mean time, been discussed by a number of physicians, and the establishment of special schools for idiots had been recommended by Dr. Pool of Edinburgh (1819), and Dr. Belhomme of Paris (1824). Practical attempts, on a small scale, had also been made at Salzburg in Austria (1816), at the American asylum for the deaf and dumb in Hartford, Ct. (1818); at the Bicêtre, one of the large insane hospitals in Paris (1828); at the Salpêtrière, another insane hospital at Paris (1833); by Dr. Voisin, who organized a school for idiots at Paris, in 1833, and by other philanthropists. But all these attempts were of short duration, and a firm basis was not gained until the establishment of the school of Dr. Seguin. In 1848, Dr. Seguin settled in the United States, where he assisted in the organization and improvement of several institutions for idiot instruction. In 1874, there were three schools for idiots in France,—at the Bicêtre and the Salpêtrière at Paris, and at Clermont, with an aggregate number of 85 inmates. In Belgium, institutions for the instruction of idiots are connected with the insane asylums at Gheel and Bruges. The Netherlands have one school for idiots, at the Hague, founded in 1855, with which, three years later, a medical asylum was connected. In Switzerland, Dr. Guggenbühl opened, in 1842, a school specially intended for *cretins*, on the Abendberg, in the canton of Bern. His pretended ability to cure *cretins* attracted for a time great attention, but was, afterwards generally denounced as a fraud. In 1874, Switzerland had two private schools for idiots, in the cantons of Bern and Basel, with an aggregate number of 27 inmates. There are similar schools in the canton of Thurgau and in the city of Zürich. In the German provinces of Austria, an attempt to establish a school for idiots was made, as early as 1816, at Salzburg, by the teacher Guggenmoos. A few years later, twelve *cretin* children were received at the monastery of Admont, in Salzburg. From 1835 to 1847, Haldenwang, a clergyman of Würtemberg, maintained at Wildberg a private institution for idiot children. The governments of several of the German states granted the means for establishing idiot asylums; and Dr. Kern, who had already, in 1842, begun to experiment in Eisenach, succeeded in effecting remarkable partial cures, and was placed by the Saxon government at the head of an excellent asylum in Gohlis, near Leipsic; while *Sägert* in Berlin (1844), *Krause* in Halle (1840), *Gläsche* in Hubertsburg (1846), and Dr. *Rösch*, in Würtemberg, were no less successful. In 1874, Prussia had ten idiot asylums, some private, and some maintained by the state. Sweden had, in 1874, three schools, and Russia, one school for idiots. In England, the first efforts for the instruction of idiot children were made by some benevolent ladies, in Lancaster, Bath, Ipswich, and Brighton. A movement for establishing idiot asylums on a large scale began in 1847. The institution at Earlswood, near Redhill, Surrey, had, in 1874, 700 inmates; other institutions are the Eastern County Asylum, Essex Hall, Colchester, the Western Counties Asylum, at Starcross, near Exeter, the Midland Counties Asylum, at Knowle, and the Royal Albert Asylum, near Lancaster. A private institution of Dr. Langdon Down, at Normansfield, near London, is only designed for the wealthy. All these institutions have training schools connected with them. Scotland has a national institution for the education of imbecile children, at Lasbert, Stirlingshire, with 90 pupils. There are also schools for idiots in Ireland, Canada, and New South Wales. In the United States, the earliest efforts to instruct idiot children were made, as has already been stated, in the Hartford asylum for the deaf and dumb. Similar attempts, but only in isolated cases, were subsequently (1838 or 1839) made in the Perkins Institution for the Blind in Boston, and in the New York Deaf and Dumb Institution. The first impulse to the establishment of special schools for idiots was given (1845) by the letters of George Sumner, describing his visit to the Paris schools. Among the first and foremost promoters of the cause in the United States, were Dr. S. B. Woodward, superintendent of the hospital for the insane, at Worcester, Mass., and Dr. Frederick F. Backus, of Rochester, N. Y. The legislatures of Massachusetts and New York at once took action in the matter. In New York, Dr. Backus, who had been elected a member of the state senate, reported, in 1846, a bill for the establishment of an idiot institution; and, in Massachusetts, the legislature appointed a commission to investigate the condition of idiots and report suitable measures for their instruction. In accordance with the report of the commission, an experimental school was established at South Boston, in Oct. 1848, which was, in 1850, incorporated as the Massachusetts School for Idiotic and Feeble-Minded Youth. It was, from its foundation until 1876, under the direction of Dr. Howe, whose death occurred in that year. The state makes an annual appropriation of $16,500 for its support, and poor children are admitted without charge. The states of Maine, New Hampshire, Vermont, and Rhode Island each support a few pupils in this institution. In New York, the establishment of the first school for idiots, which, in 1846, had been favorably reported by Dr. Backus, was delayed until 1851, when an experimental school was opened at Albany, which was subsequently, as a permanent state institution, transferred to Syracuse, where a large edifice was erected for its accommodation at a cost of nearly $90,000, with facilities for the instruction and care of 150 pupils. Since then, it has been enlarged. The school has been, from the first, under the direction of Dr. H. B. Wilbur, who previously, from 1848 to 1851, had conducted a private school for idiots at Barre, Mass., which, after he had accepted the call to Albany, was carried on by Dr. George Brown. The Pennsylvania Training School for Feeble-Minded Children, originated as a private school, in 1852, at Germantown, but was, in the following year, incorporated under its present name; and in 1857, after receiving a grant from the state, transferred to its present location at Media, Delaware Co. The Ohio State Asylum for the Education of Idiotic and Imbecile Youth, which is wholly supported by the state, was organized at Columbus, in 1857, as an experimental school. It was permanently established in 1864, when a site, about 2 miles from the city, was purchased, and a building erected, in 1868, affording accommodation for 250 inmates, but subsequently enlarged. In Kentucky, the Institution for the Education of Feeble-Minded Children and Idiots was established in 1860, at Frankfort; and in Illinois a similar institution, in 1865, at Jacksonville. The Connecticut School for Imbeciles was established at Lakeville, in 1858. The city of New York opened, in 1867, a school for idiots in connection with the idiot asylum on Randall's Island. A private school, which limits the number of its pupils to 12, was opened in 1871 at Fayville, Worcester Co., Mass. The report of the U. S. Commissioner of Education for 1874, gives the following statistics of these institutions:

NAMES.	Number of instructors and other employés	Number of inmates			Total number of inmates since opening	Income	Expenditures
		Male	Female	Total			
Connecticut School for Imbeciles	12	45	34	79	164	....	....
Illinois Institution for the Education of Feeble-Minded Children	24	66	37	103	254	$24,500	$24,500
Kentucky Institution for the Education of Feeble-Minded Children	14	50	49	99	213	7,500*	....
Private Institution for the Education of Feeble-Minded Youth at Barre, Mass	50	52	23	75	190	....	40,000
Massachusetts School for Idiotic and Feeble-Minded Youth	16	71	47	118	530	22,669	23,645
Hillside School for Backward and Peculiar Children, at Fayville, Mass	7 to 9	5	3	8	14	....	....
New York Asylum for Idiots, at Syracuse, N. Y	49	110	89	199	691	41,186	40,962
Ohio State Asylum for Idiots	74	217	143	360	614	70,283	63,433
Pennsylvania Training School for Feeble-Minded Children	65	123	101	224	733	59,898	63,594

* Also $150 per *capita* allowed by the state.

The first efforts for the instruction of idiots were made upon no definite plan, or simply with the view to subject some philosophical theory to a practical test. Since the establishment of special schools for idiots, idiocy is generally viewed as a prolonged infancy; and, in all efforts for the development either of their physical powers or their mental faculties, it is deemed essential to proceed according to the principles of physiology, and to conform, as strictly as possible, to the teachings of nature. The physical education will, of course, vary according to the deficiencies of individuals; and the instruction will always, to a large extent, be conditioned by the health of the pupils and the progress of their medical treatment. It is self-evident, therefore, that medical and educational skill must go hand in hand in the management of schools for idiots. — It has been found that Froebel's kindergarten occupations may easily be so modified as gradually to enliven the nervous action of idiot children, and that, in general, playful occupations must be resorted to, so as to make at the beginning deep and lasting impressions on their listless minds. Experience also shows that, under proper treatment, about one-third of all idiot children (if the cure be early begun) may be advanced to nearly average usefulness; another third, to the lower grades of intelligence; and the rest, to a condition in which they cease to be a mere burden on the family or on society. The largest of the American schools, that of Media, Pa., reports that, up to July 1., 1872, the improvement of its inmates had been as follows: taught to speak, 53; articulation improved, 253; taught to read, 254, to write, 146, to feed themselves, 61, to dress themselves, 94, to walk, 5; gait improved, 286; reformed from bad habits, 164, from destructive habits, 302; accustomed to some employment, 241; epilepsy cured, 23; epilepsy improved, 78.

According to the last census, the number of idiots in the United States was 24,527; in England and Wales, 29,452; in Norway, 2,039. In Scotland, the number was estimated at 3,000; in Ireland, at 7,000; in the Netherlands, at about 3,000; in Switzerland, including the cretins, at 3,800. In many countries, no official enumeration of idiots is made. Where the census has been taken, the figures are believed to be too low, as there are many cases of idiocy which are not recognized by parents and relatives.

The views of Dr. Seguin on the education of idiots are laid down in the works, *Traitement moral, hygiène et éducation des idiots* (Paris. 1846); *Idiocy and its Treatment by the Physiological Method* (New York, 1866), and *New Facts and Remarks concerning Idiocy* (New York, 1870). See also Dr. AYRES, *Report on the Education of Imbecile and Idiotic Children*, (in vol. XIII. of the *Transactions of the American Medical Association*, 1862); Dr. CHEYNE BRADY, *The Training of Idiotic and Feeble-Minded Children* (Dublin, 1864); and Dr. KERN'S essay on the subject, in *Allgemeine Zeitschrift für Psychiatrie*, 1857; and Dr. L. P. BROCKETT, in BARNARD'S *Journal of Education*, vol. I. — A statistical account of all European institutions for idiots may be found in EULENMEYER, *Uebersicht der öffentlichen und privaten Irren- und Idioten-Anstalten aller europäischer Staaten*, (1863). See also SEGUIN, *Report on Education at the Vienna Exhibition* (Wash., 1875).

ILLINOIS. This state formed a part of the North-west Territory, organized in pursuance of the ordinance of July 13., 1787, and including the whole of the public domain situated north of the Ohio river. Out of this territory were successively formed, and admitted into the American Union, the states of Ohio (1802), Indiana (1816), and Illinois (1818); subsequently, Michigan (1837), and Wisconsin (1848). According to the census of 1820, Illinois had a population of 55,211; in 1870, its population was reported as 2,511,096 giving it the fourth rank among the states of the Union. Its area is 55,410 square miles. The number of illiterates 10 years of age and upward was, at that time, 8,38 per cent

Normal Instruction.—Professional instruction and training are afforded to teachers in the State Normal University, at Normal, and in the Southern Illinois Normal University, at Carbondale. The former was organized in 1857; it includes both an academic and a normal department. Students in the latter are required to sign a pledge to become teachers in the schools of the state; and, on this condition, their tuition is afforded gratuitously. Male students must be, at least, 17 years of age; and female students, 16. Auxiliary to the normal department, is the Model School, designed to furnish an opportunity for observation and practice to those preparing to be teachers. The academic department consists of the High School, which furnishes a thorough preparation for admission into the university or for business. The High School is a department of the Model School, which comprises also a Grammar School and a Primary School. From the time of its organization to 1875, this institution had given instruction to 3,258 persons, of whom 241 had completed the course and received diplomas of graduation. During the same period, the Model School in its several grades, had received about 2,930 pupils, of whom 22 were graduates of the High School. About 25 per cent of the pupils of the Model School became teachers. The Southern Illinois Normal University was opened in 1874. It occupies one of the finest school edifices in the United States. It includes, besides a normal department proper, a preparatory department and a model school. The model school is of an elementary grade, giving instruction in the branches usually taught in the common schools; the preparatory department is of the grade of a high school, with a course of study of three years. The normal course, of four years, embraces two courses,—a classical and a scientific course; both, however, make the study of the English language and literature quite prominent. During the last year, opportunity for practice is afforded in the preparatory and model schools. Besides these two state institutions, there are two county normal schools,—the Cook County Normal School, at Englewood, near Chicago, and the Peoria County Normal School, at Peoria. Each of these has an organization similar to that of the state normal schools. There is also a normal school at Chicago, and a normal department in Eureka College, at Eureka. Teachers' institutes constitute an important agency for the professional improvement of those actually engaged in teaching. Of these, in 1874, there were held in different parts of the state 184, which continued in the aggregate 828 days, and were attended by 6,713 teachers.

Secondary Instruction.—In 1874, there were 116 public high schools in the state. The school law provides that, on a petition of 50 voters in any school township, an election for or against a high school may be held at the next ensuing election of trustees, and if a majority of the votes be found to be in favor of a high school, the trustees shall establish it. There are very many private seminaries for secondary instruction in the state, including a large number of preparatory schools, and several business colleges. Of the latter, in 1874, there were 16.

Superior Instruction.— There is a large number of universities and colleges in the state, besides several colleges for women. The name of most of the former are given in the following table:

NAME	Location	When founded	Religious denomination
Abingdon College	Abingdon	1853	Disciples
Augustana College	Paxton	1863	Lutheran
Blackburn University	Carlinville	1867	Presb.
Carthage College	Carthage	1870	Lutheran
Chicago University	Chicago	1857	Baptist
Eureka College	Eureka	1855	Disciples
Hedding College	Abingdon	1854	M. Epis.
Illinois College	Jacksonville	1829	Non-sect.
Illinois Wesleyan Univ.	Bloomington	1850	Meth.
Knox College	Galesburg	1841	Prsb.&Cg.
Lincoln University	Lincoln	1867	Cumb. Pr.
Lombard University	Galesburg	1857	Universal.
McKendree College	Lebanon	1828	M. Epis.
Monmouth College	Monmouth	1858	U. Presb.
Northwestern College	Naperville	1861	Evang.
Northwestern University	Evanston	1855	M. Epis.
Shurtleff College	Alton	1835	Baptist
St. Ignatius College	Chicago	1870	R. C.
St. Joseph's Eccles. Coll.	Teutopolis	1861	R. C.
St. Viator's College	Bourb.Grove	1869	R. C.
Westfield College	Westfield	1865	U. Breth.
Wheaton College	Wheaton	1858	Congreg.

Technical and Professional Instruction.—The principal institution for scientific and technical instruction is the Illinois Industrial University, at Urbana, chartered in 1867. It has a corps of 25 instructors, including professors, lecturers, and assistants; and, in 1875, the attendance of pupils was over 400. It comprises four colleges, of (1) Agriculture; (2) Engineering, including a school of architecture; (3) Natural Science; (4) Literature and Science. These colleges embrace 12 subordinate schools and courses of instruction, including a school of domestic science and art, a school of commerce, and a school of military science; also a school of wood engraving, printing, telegraphing, photographing, and designing. Candidates for admission to the university must be at least 15 years of age, of good moral character, and able to pass an examination in English grammar, geography, arithmetic, algebra, history of the United States, and natural science. This institution is endowed with the national land grant, and the amount of its productive funds is about $320,000. The value of its grounds, buildings, etc., is about $640,000. It is well supplied with apparatus, and has a library of over 10,000 volumes. The Illinois Agricultural College, at Irvington was organized in 1866.

The chief theological schools are the following:

NAME	Location	Religious denomination
Theol. Dept. Shurtleff Col.	Alton	Baptist
do. do. Blackburn University	Carlinville	Presb.
Union Theol. Seminary	Chicago	Baptist
Chicago Theol. Seminary	Chicago	Cong.
Theol. Sem. of Northwest.	Chicago	Presb.
Biblical Dept. Eureka Col.	Eureka	Christian
Garret Biblical Inst.	Evanston	Meth. Epis.
Wartburg Seminary	Mendota	Lutheran
Augustana Theol. Sem.	Paxton	Lutheran

In these various institutions, in 1874, there were 49 instructors, 18 endowed professorships, and 290 students. The total amount of productive funds was about $775,000; and the libraries contained, in the aggregate, nearly 30,000 volumes.

The *law schools* consist of the law departments of Illinois Wesleyan University, and McKendree College, and the Union College of Law, at Chicago. The *medical schools* comprise the Chicago Medical College (a department of Northwestern University), Rush Medical College, the Woman's Hospital Medical College, and the Hahnemann Medical College, at Chicago.

Special Instruction. — The Illinois Institution for the Education of the Deaf and Dumb, at Jacksonville, is one of the most extensive and important institutions for deaf-mute instruction in the United States. It comprises departments for instruction in the sign language, as well as in articulation, or *visible speech*, and in drawing; also domestic and industrial departments. In 1874, there were nearly 400 pupils on the rolls of the institution, and a corps of 20 instructors. The Illinois Institution for the Education of Feeble-Minded Children, at Jacksonville, is also a large and important institution, founded in 1865. Its efficiency is thoroughly attested, the children being instructed successfully in most of the simple elementary branches of knowledge, besides being taught important matters connected with domestic economy and practical occupations.

Educational Associations. —The State Teachers' Association, established in 1853, holds its convention annually, and is well sustained; besides which there are many other local associations, in more or less active operation. A state association of county superintendents was organized about twelve years ago, for the purpose of promoting the efficiency of county school supervision, and securing a more uniform compliance with the requirements of the school law.

ILLINOIS COLLEGE, at Jacksonville, Ill., chartered in 1835, is non-sectarian. The value of its buildings, grounds, and apparatus is $190,000; the amount of its productive funds, $135,000. It has a classical and a scientific course, libraries containing 11,000 volumes, and a corps of 9 instructors. The cost of tuition is $36 per year. Connected with the college are the Whipple Academy and the Jacksonville Business College. The number of students, in 1875-6, was as follows: in the college, 60; academy, 76; business college, 221. The Rev. Julian M. Sturtevant, D. D., LL. D., is (1876) the president of the college.

ILLINOIS WESLEYAN UNIVERSITY, at Bloomington, Ill., founded in 1850, is under Methodist Episcopal control. It has a fine campus of 10 acres, libraries containing 2,400 volumes, and productive funds amounting to $90,000. The value of its buildings, grounds, and apparatus is $150,000. Both sexes are admitted. A law department was organized in 1874. In 1875—6, there were 15 instructors and 776 students (546 preparatory and 230 collegiate).

ILLITERACY (from the Latin *illiteratus*, unlettered, *i. e.*, ignorant of letters or books) is a term used at present to denote the inability to read and write. The mere fact as to how many persons in any community are unable to read and write is not, in itself, of very great value; but, in its relations to ignorance and knowledge, it is highly important, as marking the dividing line on one side of which may be placed all those who are hopelessly consigned to a total ignorance of books, and are, therefore, deprived of all the advantages to be derived from their study or perusal; and, on the other, all who, by means of such knowledge and such sources of information, have been placed on the high road to thrift, skill, intelligence, culture, virtue, and every other element of the highest civilization. To the individual, illiteracy is a most deplorable misfortune; to the community, in proportion to its extent, it is an acknowledged bane. The principle of free schools is derived from a consideration of the numerous evils which popular ignorance entails upon a community; and of this ignorance illiteracy is the exponent. On the same principle is based all legislation for compulsory attendance at schools. These principles have, however, been called in question; but very rarely. "Parents", it has been said, "cannot justly be forced to give their children a certain amount of education, unless it is assumed that this education is as necessary for the mind as food and clothing are for the body"; and, of course, this is an assumption that cannot be maintained. But national systems of education have regard to the good of the community, not merely, or chiefly, to that of the individual. The want of literary education is the source of numerous ills to the body politic, which legislation should strive to remove. The statistics of illiteracy are, thus, of the greatest value, as indicating the progress or retrogression of a nation in the most important elements of well-being. (See CRIME AND EDUCATION.)

A full view of this subject requires that the attention should be given to (I) the sources of information—what they are, and how reliable they can be made; (II) the general facts obtained by an investigation into the condition of the people in the different countries of the world, which, for this purpose, may be distributed into various groups, comprehending the totally ignorant barbarous tribes, the extremely illiterate populations of the old despotisms of Europe, Asia, and Africa, and those in which only a modified degree of illiteracy is still found to exist,—the highly-favored states of Europe and North America; (III) some special facts regarding the comparative illiteracy of (1) males and females, (2) adults and youth, (3) the general population and criminals, and (4) the general population and conscripts; (IV) the relations of illiteracy to (1) superior knowledge, (2) common labor, (3) skilled labor, (4) national power, (5) pauperism, (6) crime, (7) home and its influences, (8) higher civilization and religion; (V) the causes of illiteracy; (VI) remedies, and the prospects of improvement by the operation of various influences peculiar to modern civilization.

I. As the chief sources of information, dependence must be placed upon (1) *census reports*, some of which, especially such as those of Italy for 1861 and 1871, are replete with instruction on this subject; but those of the United States are the most valuable of all, embracing, as they do, four periods, 1840, 1850, 1860, and 1870. The later ones are of especial importance, as they afford particular statistics of various classes, — native and foreign, white and colored, adults and youths, males and females. All the facts presented in the census reports for 1840, -50, -60, are brought together and digested in a paper on *Illiteracy* published in the *Annual Report of the U. S. Commissioner of Education for* 1870, in which the census returns of these three periods are compared. The results of the census of 1870, in this regard, are tabulated and compared in the *Annual Report* of 1871. (2) *Government reports* on education, such as those of the U. S. Bureau of Education for 1870—4, and the special *Circulars of Information* issued by the Bureau, contain a large amount of information on this subject, derived from various sources, especially the papers on *Education and Labor*, *Education and Crime*, and *Education and Pauperism*. (3) Important facts are obtained from special official reports, on *Criminals*, *Conscripts*, and *Marriages*, by some of the European governments.

II. The first group, that of wholly illiterate savage or barbarous tribes, needs only to be referred to, without any enumeration. Having no books and no written language, their total ignorance reacts upon their barbarism, and perpetuates the degradation which has caused it. Passing to those nations that have written languages and books, there appears, first, a group consisting of those which, descended from ancient despotisms, have been enveloped in thick clouds of ignorance from which some of them are only just emerging,—Turkey, Egypt, Persia, Russia, and (not long since) Greece, Poland, Italy (till her late revival, and even now in her southern provinces), Spain and (doubtless) Portugal, with their American colonies. In all these, to a greater or less extent, popular ignorance, or illiteracy, has prevailed up to the present time. The government has neither provided for nor fostered universal education; and the political and religious status of the people has afforded no incitements to any efforts of their own in this direction. Even in the Spanish and Portuguese colonies, the old spirit and habits inherited by the people have been stronger than the desire for liberty, intelligence, and progress. To the group of nations above referred to, Hungary, not long ago, belonged; but, of late, the people, by their energy and enthusiasm, have made wonderful progress in the march of intelligence; but, even now, she remains, side by side, with her sister state Austria, in which, despite the influence of her intelligent and progressive German population, one half of the inhabitants remain in a condition of illiteracy. By the side of this group, but with a history, and under conditions, widely different, stands India, one of the most benighted of nations, having 90 per cent of her males, and 95 per cent of her whole population (for letters are religiously and socially forbidden to females) wholly illiterate; and this, notwithstanding that she still possesses the wonderful literature of her early days, in the hands of the Brahman caste, still devoted to learning, with her wealthy Parsees fostering education, and the influence of her princely Mohammedan conquerors still remaining in the religious schools connected with the mosques. This fact shows to what an extent outcast and ignorant masses tend to depress and degrade the general condition of a people. The case of the Mohammedan countries—Turkey, Persia, Egypt, is quite peculiar. These people are the successors of the Saracens, whose learning and culture shone so brightly, while Europe was enveloped in the darkness of the middle ages, and who contributed so largely to the sources of modern civilization, and gave to it such an impetus.—China may be referred to, as presenting a somewhat singular phase of illiteracy, her political system holding out the strongest inducements to education and learning to the males, while the females are very generally kept in a condition of illiteracy. (See China.) This is one of the results of Confucianism, which, while it accords to the matron the highest respect, has treated the subject of female education (instruction in letters and books) with entire indifference. China, therefore, as far as the freedom of her male population from illiteracy is concerned, would take a high rank among educated nations; but, as her women are untaught, she must be placed with those who are half in darkness. — Japan would come in here, side by side with China, whose religion and philosophy, sacred books, with their language and literature, and peculiar alphabetic characters, she adopted long ago, introduced into her schools, and taught to the masses of her people. But she has done more than China, she has added a simpler (syllabic) writing of her own (*kalakana*); and, what is far more, she has taught her women as well as her men. The Japanese cannot be considered an illiterate nation. The number of persons, who cannot read or write, is comparatively small, even the most degraded classes being often able to write the *kalakana*, and to read the books printed in that style; so that her illiterate population is set down at no more than 10 per cent. (See Japan.) In a distinct group may be placed France, Belgium, England, and Ireland, about one-third of their people being unable to read or write. The proportion in Ireland may be somewhat larger; but, in that country, the people have received from the priesthood some instruction in letters beyond what the government has provided for them. In these four countries, the spirit of progress has had to contend against many of the same influences that have kept down the people of the more benighted countries of Europe already considered. Next in order of advance, comes the

American Union, with its 20 per cent of illiterates.—The Netherlands, Germany proper, Denmark, Norway and Sweden, and perhaps Switzerland, are entitled to the distinction of showing the smallest amount of illiteracy. (See TABLE.)

III. The diversity of social customs and national institutions leads to corresponding differences in the condition of various classes; and the degree of illiteracy found to exist in these, respectively, presents a basis for very important considerations in relation to the expediency of particular legislative measures. Hence, the importance of ascertaining the comparative illiteracy of youth and adults, males and females (*sex illiteracy*), white and colored (*race illiteracy*), etc. The statistical facts in regard to these points are very imperfect; but many, that are quite reliable, are exceedingly instructive. Thus, according to the U. S. census of 1870, of every 1,000 persons of the population, 10 years old and upward, 146 were illiterate; of adults, 94; of youth (from 10 to 21 years of age), 52. In Germany, the census of 1871 reports 9½ per cent of men, and 15 per cent of women, unable to read and write. In Scotland, 11 per cent of men, and 21 per cent of women could not read or write at marriage. In Bavaria, only 7 per cent of the recruits were illiterate; in Germany, however, the mass of the illiteracy is in the north-eastern provinces of Posen and Prussia proper, among a people foreign to the language and institutions of the German nation; while, in most of the German states, the percentage of illiteracy is very small — in some, less than one per cent. In France, the census of 1872 showed 27 per cent of illiterate males and 33 per cent of illiterate females; while the census of Spain (1860) showed 69 per cent of males and 91 per cent of females. Italy, in 1861, was reported as having 60 per cent of illiterate male adults and 68 per cent of illiterate male youths (from 12 to 18 years of age). In the city of New York, the census of 1870 reported, out of the total population of 942,292, 14,974 male adults and 36,810 female adults, as unable to write; while of male youths (from 10 to 21), there were only 3,088, and of female youths, 4,929, unable to write. This close correspondence in the one case, with the large discrepancy in the other, is a very suggestive fact, pointing as it does to the effect of foreign immigration, on the one hand, and to the influence of a great common-school system, on the other. The average of illiterates in Belgium is 30 per cent; and in Great Britain and France, it is considerably below 50 per cent; while, in Belgium, the percentage of illiterate criminals (1855) was 57 per cent, in France (1871) it was 41 per cent. A comparison, based on full and accurate statistics, of the percentage of illiteracy among the adults of a population, with the percentage of illiteracy among adult criminals, would demonstrate, with great force and clearness, the effect of education upon crime. (See CRIME and EDUCATION.) The percentage of illiteracy among conscripts, in any country, affords a means of ascertaining the general condition of a people in this respect, inasmuch as inquiries in regard to it are generally conducted with considerable care.

IV. The various points considered in this division of the subject cannot be treated upon a basis of statistics; but, theoretically, or by *a priori* reasoning, it may be satisfactorily shown that the advancement of a people in every department of learning, science, art, artistic and industrial labor, depends on the diffusion of intelligence, and the means of intelligence — reading and writing, among all classes of the community. Illiteracy is an exponent of ignorance; and "what bodily disease," says commissioner Eaton (*Report of U. S. Bureau of Education*, 1871), "has ever wrought the terrible evils to society that come from ignorance, whose children are destitution and crime? The children whom society, the church, and the school fail to educate, learn in the streets, and from countless teachers of vice, aided by those grim masters, hunger and want, the malign arts that render the property of our households, the virtue of our women, and the health and happiness of our people insecure."

V. The causes of illiteracy, in nations that have already reached the condition of civilization, are various; among them may be mentioned (1) *absolutism*, in government, basing itself upon the principle of "divine right" instead of the will of the people, or in religion, depriving the people of all freedom of thought; as is shown by the fact that a people controlled by a despotic power — monarchy or hierarchy — are, usually, largely illiterate, the ruling class, as in the case of the priests in Egypt, and the Druids of Britain, engrossing all knowledge, and shutting up its avenues against the people; (2) *caste*, aristocracy, or class distinctions fixed as institutions, must necessarily promote illiteracy, for a similar reason; as must also (3) *restrictions upon the right of suffrage*, shutting out any large class of the community from its exercise; and, even when the institutions of society are free, and public schools are abundant, frequently, legislative compulsion may be required, as an intermediate step to promote the acceptance, on the part of ignorant or vicious parents, of the advantages of education for their children; and therefore, (4) the *absence of compulsory attendance laws* may be a cause of illiteracy. (See COMPULSORY EDUCATION.)

VI. Improvement in regard to the diffusion of learning must come from the operation of judicious measures designed to remove the causes of illiteracy above referred to. The general acceptance by civilized nations, at the present time, of the principle of popular or state education, as the only stable foundation of national prosperity, with the vast augmentation of the means of communication, through the varied applications of steam and electricity, must gradually but surely diminish among every people the ratio of illiteracy. Evidence of a strong tendency in this direction is shown by every succeeding census in the great and progressive nations of the world.

The following tables present the statistics of illiteracy in different countries.

TABLE I.

RATIO OF ILLITERACY TO POPULATION.

[Countries marked * are nearly free from illiteracy; in those marked †, the ratio of illiteracy is very large but not definitely ascertained.]

COUNTRIES	Per cent of Illiteracy	
	Earlier date	Recent statistics
Argentine Republic	—	83
Austria (conscripts)	—	49
Bavaria "	8	7
Belgium	42	30
Brazil	—	†
China	—	50
Denmark	—	*
Egypt	—	†
England	—	33
France	55	33
Germany	—	12
Greece	99	82
Hawaii	—	*
Hungary	—	51
India	—	95
Ireland (criminals)	—	46
Italy	78	73
Japan	—	10
Mexico	—	93
Netherlands (conscripts)	23	18
Norway	—	*
Poland	—	91
Portugal	—	†
Russia	99	91
Scotland (criminals)	—	21
Spain	88	80
Sweden	—	*
Switzerland	—	*
Turkey	—	†
United States	23	20

TABLE II.—ILLITERACY IN THE UNITED STATES.

[Censuses of 1840, -50, and -60 reported those who could not read and write; that of 1870, those who could not read and those who could not write.]
[*r* means cannot read; *w*, cannot write.]

Race	Age	Date of census	Numbers	Per cent
All Classes	20 and over	1840	1,650,478	22
	" " "	1850	2,497.901	23
	" " "	1860	3,012.230	20
	21 " "	1870	3,715,196	20*w*
	10 " "	"	5,658,144	20*w*
	" " "	"	4,528,084	16*r*
	10 to 21....	"	1,942,948	20*w*
Whites	20 and over	1840	579,316	9
	" " "	1850	1,112,019	11
	" " "	1860	1,181,918	9
	21 " "	1870	1,894,688	12*w*
	10 to 21....	"	957,223	11*w*
Colored	20 and over	1840	1,071,162	100
	" " "	1850	1,485,882	92
	" " "	1860	1,830,412	92
	21 " "	1870	1,820,508	82*w*
	10 to 21....	"	985,725	76*w*
Foreign-born (most of them whites)	20 and over	1850	204,753	15
	" " "	1860	362.973	15
	21 " "	1870	677,500	15*w*
	10 " "	"	777,873	15*w*
Native-born (white and colored)	20 and over	1850	2,293,148	24
	" " "	1860	2,649,357	21
	21 " "	1870	3,037,696	22*w*
	10 " "	"	4,880,271	21*w*
Native White	20 and over	1850	808,024	10
	" " "	1860	819,541	8
	21 " "	1870	1,217,188	10*w*

TABLE III.

ILLITERACY AS COMPARED WITH VARIOUS DEGREES OF EDUCATION.

Condition	COUNTRIES	Date of census or report	Per cent		
			Illiterate	Nearly illiterate	Read and write
General Population	**France**	1866	33	11	56
	" (military)	"	19	9	72
	" (civil, males)	"	29	10	61
	" (civil, females)	"	37	13	50
	" (adults)	1872	33	10	57
	" (minors, 6—20 years)	"	24	13	63
	Spain (men)	1860	65	4	31
	" (women)	"	86	5	9
	" (both)	"	75	5	20
	United States (aged 10 & over)	1870	16	4	80
Conscripts	**Belgium**	1851	37	11	25
	"	1856	34	9	24
	"	1859	33	7	26
	"	1861	32	7	27
	"	1867	26	5	33
	"	1868	25	6	32
	"	1869	25	6	31
	France	1864	27	3	68
	"	1867	21	2	75
	Germany	1851—52	5	20	
	Italy	1869	62	4	34
	Netherlands	1846—58	21	2	77
	"	1859—62	20	2	78
	"	1868—69	13	2	80
	Switzerland	1870			
	Appenzell Int. (read)	"	20	39	25
	" " (write)	"	18	36	26
	" Ext. (read)	"	—	4	22
	" " (write)	"	—	5	30
	Basel (all read fluently)	"	—	—	—
	" (write)	"	—	11	46
	Bern (read)	"	3	—	—
	" (write)	"	3	—	—
	Soleure (write)	"	2	18	80
	Zürich (write)	"	1	17	39
Criminals	**Belgium**	1850	55	29	13
	"	1855	57	26	16
	England & Wales (males)	1871—72	31	64	4
	" " " (females)	"	39	59	1
	" " " (both)	"	34	63	3
	Ireland (males)	1872	39	14	47
	" (females)	"	57	21	22
	" (both)	"	46	17	37
	Scotland (males)	1871—72	20	53	24
	" (females)	"	24	63	13
	" (both)	"	21	51	20
	France	1858	44	39	13
	"	1861	39	44	11
	"	1862	40	45	9
	"	1868	38	42	16
	"	1871	41	41	16
	Italy (galley-slaves	1871	55	12	29
	(prisoners—males)	"	39	15	37
	" females)	"	53	27	17
	" both)	"	43	15	34
	Conde'd minors (males)	"	41	7	44
	" " (females)	"	58	14	16
	" " (both)	"	44	8	40
	" 1 yr. or more (males)	"	74	—	26
	" " " " (females)	"	67	1	31
	" " " " (both)	"	69	1	29
	Minors in custody (males)	"	16	38	39
	" " " (females)	"	8	18	22
	" " " (both)	"	16	36	38
	United States (Pennsylvania Penitentiary)	1841—53	20	19	61
	"	1854—66	17	15	68
	"	1867—70	24	18	58
	"	1871—75	31	7	62
	" (adults)	1850—59	15	15	20
	" (minors)	"	24	19	57
	" (adults)	1860—69	17	13	70
	" (minors)	"	24	15	61
	"	1829—74	20	15	65
	" N.Y. news boys	1866—76	17	28	55

IMAGINATION, Culture of. Imagination is the power by which conceptions, originally formed from the perception of natural objects or their representatives, are reproduced in a fictitious combination which resembles the natural. This faculty, existing as it does, in a greater or less degree, in every mind, and entering to some extent into almost every mental act, must be placed among the few great powers of the mind which demand careful cultivation. The influence of the imagination is equally felt in moral and intellectual action. By its aid, the man of science, recombining the elements gathered by an observation of the visible world around him, projects his thought into the unseen universe, and determines the existence of conditions which knowledge alone could never detect, but which observation serves only to confirm. Through the influence of imagination alone, the record of the past becomes a guide and a warning to the present. Thus, the hand of charity is opened to relieve necessities which the active exercise of this faculty pictures to us as existing in the homes of want and misery. The everyday thought of the boor, and the rare flight of the man of genius are alike indebted to its aid. The universality of its presence, therefore, and the danger attending its unregulated development, constitute its peculiar claim to attention at the hands of the educator. Notwithstanding this, however, the need of a systematic cultivation of the imaginative faculty seldom receives practical recognition. This is owing somewhat to the fact that the want which would be produced by its total neglect, is partly met by its indirect and irregular cultivation in the studies of any ordinary school course; but more to the hidden nature of its action, and the want of that subtle discernment necessary in the teacher to detect its influence in the mental operations of the pupil. A knowledge of its power and of the consequent need of its cultivation is derived almost entirely from our own experience. The extent, therefore, to which it influences or controls the judgment, is appreciable only in our own case, and in that only approximately; and, hence, an analysis of its effect on the thought or actions of others becomes a matter of extreme difficulty. The neglect of its cultivation in the ordinary school curriculum is productive of results hardly less pernicious than its abuse by undue stimulation; for, while by the latter the judgment and reason are subordinated, and the mind is turned from the consideration of the practical, and concentrated too exclusively upon the ideal, thus enveloping the daily concerns of life in a kind of mental mirage, which results in disappointment and discouragement when the cloud is dispersed; by the former, the dull, matter-of-fact phase of existence acquires undue prominence, to the suppression of all sentiment and that love of the beautiful which cheers and helps us to find, even in the commonest aspects and the least fortunate circumstances of life, reason for admiration and gratitude. These considerations should secure for it careful attention.

The development of the imaginative faculty begins at a very early period. The consciousness, on the part of the child, of objects external to itself, constitutes perception. This is very soon followed by conception, which consists in taking from the object perceived a mental picture capable of reproduction at pleasure, in the absence of the original. This latter may be called the first act of the imagination—the storing of the mind with materials for future use. Simultaneously with this, or only shortly after, occurs the naming of these materials—the association of thoughts with words, with a view to their expression as language. (See INTELLECTUAL EDUCATION.) Thus far, the action of the imagination depends upon the perception of actual objects. It now remains for the imagination to use the materials already provided, by discarding the actual object, and forming partly by the aid of words as symbols of general ideas, an ideal picture; or, independently of words, and by its own act, creating for itself scenes and images not less vivid than their tangible representatives. The work of the imagination, therefore, is complementary to that of observation. The order is, (1) perception, (2) conception, (3) imagination. The action of the latter is presupposed by that of the two former. Knowledge alone — the mere storing of the mind with facts and conceptions—would be of little value without the vivifying power of imagination. Its function is to lift the mind from the contemplation of the actual, and carry it beyond the field of mere observation, into those ideal regions where the tangible has no existence, or where its existence cannot be actually verified.—In the cultivation of the faculty of imagination, several methods are open to the teacher, the most common of which are pictures, oral narratives, and reading, or combinations of these. In all, the attention is the principal object to be secured; since thus only can a vivid mental picture be formed, and any other is worse than useless. The picture is, of course, the surest instrument for accomplishing this result, since it is a direct appeal to the eye —the earliest and most powerful agent by which knowledge is obtained. It is desirable, therefore, that the picture should be clearly drawn or painted, and in as simple or elementary a form as is consistent with the idea of completeness. A few salient features, therefore, are all that are necessary for this purpose; since fine gradations of color or shading can be observed only at the expense of the general impression. In oral narrative, the degree to which the clearness of the general impression is produced, depends entirely upon the teacher. A warm, sympathetic nature is here the only qualification. By it, he is enabled to place himself on the pupil's level, to enter into his thoughts, and by the use of figures and illustrations familiar to youthful minds, to produce a correct and precise mental image. Any other disposition than this is a decided disqualification for the cultivation of the imagination by this method. Where the picture and the oral narrative are used together, the former should not be exhibited till after the description. It should then be produced to re-inforce the description and give it greater clearness; but, if it is exhibited before that time, the attention is drawn to it at once, to the neglect of the narrative. Pictures which are to be used for the purpose of illustration, should, if possible, be new to the pupil in order to produce their best effect. Of the methods mentioned, however, for the cultivation of the imaginative faculty, reading is not only the most common, but is, in most cases, indispensable. The requisites in this case, however, are still the same. The object being always to fix the attention as powerfully as possible upon a mental picture, the style should be simple and clear, but graphic and forcible, abounding in concrete terms, not in abstract phrases, and appealing to the experience of the pupil, and awakening his sympathies. An excellent test of the clearness of the mental picture formed is that of recalling at the end of the reading, the scenes, incidents, and actors in the order of their introduction or occurrence. Almost every branch pursued in the ordinary school or college course affords some opportunity for the cultivation of the imaginative faculty, but special fields for its most active exercise are found in geography, history, and poetry. Some departments of natural science may also afford occasion for its activity. The condition of the earth in prehistoric time, its chemical, geological, and meteorological constitution, the plants and animals that grew or moved upon its surface, together with its relation past, present, and future, with other worlds, afford scope for the exercise of the most lively imagination. The history of the human race, also, is filled with scenes and incidents of which, if skillfully presented, the mind of the pupil will never tire. Even in the teaching of subjects usually considered dry and uninteresting, there is field for the exercise of this faculty. Grammar, mathematics, political economy, and logic, if illustrated by a teacher of active fancy, can be freed, in large measure, from the abstract nature which is supposed to be essential to them, and which renders them ordinarily so uninviting. In regard to the use of fiction as an agent in the cultivation of the imagination, much discussion has arisen, the objection usually urged being that its effect is to stimulate this faculty unduly. This is probably true of one class only; namely, those in whose minds the imaginative faculty exists by nature in an abnormal degree. Where this power is deficient, it will hardly be said that the perusal of works of fiction can do more than to develop the faculty, so as to bring it into proportion with the other mental powers; while the probability is, that the result will fall short of this. In the remaining class, those in whom this faculty exists in a normal proportion, the evil result of stimulation produced by the reading of works of fiction, has, perhaps, been overrated. The reading alone can only serve to fill the mind with high ideals—the harm resulting has probably been produced by neglecting to provide the necessary means or occasions for an active exercise of the high and generous sentiments and resolves thus aroused. If we read continually of suffering, but never give alms, habit soon causes us to accommodate ourselves to this condition as the natural one, and the mental excitement ceases to seek any outward, active expression. This, probably, is the explanation of the anomaly sometimes noticed in the histories of eminent writers, that their works are filled with sentiment and tenderness, while their lives were mean and despicable. The result here is owing to that half education which rouses the sympathies, and then neglects to provide for their exercise. But this abuse of the true method can hardly be considered a condemnation of the method itself. An experienced educator says on the subject of the general culture of the imagination: "I much fear, neither teachers nor scholars are sufficiently impressed with the importance of a proper training of this faculty. Some there may be who despise it altogether, as having to do with fiction rather than with fact, and of no value to the severe student who wishes to acquire exact knowledge. But this is not the case. It is a well-known fact that the highest class of scientific men have been led to their most important discoveries by the quickening power of a suggestive imagination. Of this the poet Goethe's original observations in botany and osteology may serve as an apt illustration. Imagination, therefore, is the enemy of science only when it acts without reason, that is, arbitrarily and whimsically; with reason, it is often the best and most indispensable of allies." (See FICTION.)

IMITATION. The possession of this important faculty, and the desire to exercise it, constitute two essential elements of all human progress. From childhood to maturity, and even beyond—as long, indeed, as the effort at self-improvement is kept up—a vast majority of the human race are employed merely in imitating the models that have been set up by individual genius, or by the accumulated wisdom and taste of ages; and their success in life is greater or less, according to the accuracy of their imitation. Especially during childhood and youth, is this faculty brought into active play. It is the necessary accompaniment and basis of instruction, the stepping-stone to all excellence. Being of so great importance, therefore, in nearly every department of education, it should receive the special attention of the teacher.—The conditions of success in imitation are chiefly two: (1) accurate observation, and (2) a retentive memory. Probably few have noticed how slightly the faculty of observation is usually exercised. This, however, may be easily illustrated. Of twenty persons listening to a speaker whose voice has some peculiar tone or inflection, it will probably be found that only half a dozen or perhaps even less will notice it, unless it is very marked; and of these, only two or three will be able to reproduce it with any degree of accuracy. How often do men differ as to the form or color of some feature in the face of an acquaintance! For example, let a draughtsman, whose attention has not previously been specially called to the object, be asked to draw a rose-leaf. The probability is, that he will confess his inability to do so, though he would recognize a rose-bush without difficulty. Instances might be multiplied of the loose, general way in which this faculty is used, the result of which is, that only an indefinite impression is left on the mind, instead of an accurate picture. (See ATTENTION.) If it be granted then, that mere imitation, when uncultivated, cannot be depended on, it will probably not be denied that a good memory, and, in most cases, a certain degree of mechanical skill, are necessary, when it is cultivated, to produce the best results. It only remains, therefore, to point out a few of the studies and pursuits in which imitation is the chief instrument, and to indicate some of the methods by which it may be made most efficient. Among the first, may be enumerated writing, map-drawing, as now generally used in teaching geography, and nearly all the arts; among them, drawing, with all the professions that immediately depend upon it, as surveying, civil engineering, mechanics, architecture, together with all the natural sciences in the teaching of which, sensible objects are to be represented. In learning to speak a foreign language, also, a direct appeal is made to the faculty of imitation. Among the methods used for producing efficiency in imitation, the kindergarten system is of great value for insuring steadiness of hand and accuracy of eye. (See KINDERGARTEN.) The usual school exercises of reading, declamation, dialogues, etc., are more or less successful, according to the closeness with which the feelings and expressions of imaginary persons are imitated. Proficiency in classical composition, also, is promoted, in many colleges and universities, by placing before students original models for imitation. The value of this faculty, in moral education, can hardly be overstated, that most powerful of all educators—example—depending to a great extent on imitation for its efficiency. (See EXAMPLE.)

INCENTIVES, School, consist of rewards of various kinds, offered to pupils for progress in study and good behavior; such as "good tickets", certificates of merit, books, and other things awarded as premiums for excellence either in proficiency or conduct. Besides these, various expedients are resorted to for the purpose of exciting emulation, which are also to be classed among school incentives; such as giving public praise, awarding merit marks, putting the names of meritorious pupils upon a *roll of honor*, which is suitably embellished and framed, and hung in a conspicuous place in the schoolroom. The dismissal of pupils from school previous to the usual time is also to be placed among the same class of incentives. To this, however, strong objection has been made, inasmuch as it seems to imply that attendance at school is burdensome and grievous, whereas it should be made pleasant and attractive. The efficacy of this incentive, as every teacher knows, is very great, because it appeals to the natural activity of the child, upon which the confinement of school cannot but operate as a restraint, however well it may be administered; and experience has demonstrated that an occasional relief from this confinement does not, on the whole, weaken the pupil's attachment to school. All such incentives, it must be borne in mind, are of a secondary nature; and the educator should always exercise care that their influence should not be so exerted as to impair the force of higher and more enduring motives to good conduct. (See REWARDS.)

INDIA, a country in Asia, at present under British rule, with the exception of a few French and Portuguese colonies. The term India is sometimes also applied in a wider sense, embracing those countries known by the name of *Hindoostan* and *Farther India*. In this article, we treat of that part only which is known as *British India*. The area of the country under the direct rule of the British government is 904,049 square miles, with a population of 190,563,048. The native states, which, although governed by native princes, are still more or less subject to British influence, have an area of 546,695 square miles, and a population of 48,267,910, making the total area of British India 1,450,744 square miles, and the aggregate population 238,830,958. The principal religions in British India (as far as it is directly under British rule), according to the last census (completed in 1872), were represented as follows: Hindoos, 139,248,000; Mohammedans, 40,883,000; Buddhists, 2,833,000; Christians, 897,000; Sikhs, 1,174,000; other creeds, 5,102,000; of unknown religion, 425,000. The number of Christians, according to missionary reports, is however, considerably larger. The Protestants claim a native population of more than 250,000; and the Roman Catholics, according to a statement prepared in 1870 for the Vatican Council, 1,076,000. The Parsees are one of the least numerous sects, but they constitute one of the most intelligent portions of the native population. The best known among the sects of recent origin is the Brahmô-Sâmâj, founded about 1830. It is a kind of rationalistic development of Brahman and Christian doctrines, and admits into its canon of sacred books such portions of the Vedas and the Bible, as are merely theistic and not miraculous. It chiefly exists in the large cities, and its members take an active interest in all educational movements.

But little is known of the early history of India. It was, in the 6th century B. C., invaded by the Persian king Darius, and in the 4th by Alexander the Great; but the connection thus established with the countries of western Asia and Europe soon ceased, and India relapsed into its secluded position. The invasion of the country by Mohammedans began in the 8th century A. D., and, since that time, large portions of India continued under Mohammedan rule, until finally compelled to yield to the advancing power of some of the European nations. The first of these who obtained territorial possessions in India, were the Portuguese, who, early in the 16th century, established their rule by seizing some of the forts on the western coast. The English East India Company, after obtaining permission from the Mogul emperor, established its first factory in 1613, and gradually extended its power, until at last nearly the whole of India was united under its rule. In 1858, the East India Company transferred all its possessions to the British Crown; and, in 1876, the queen of England assumed the official title of *Empress of India*.

I. *Ancient India.*—India, like China, Persia, and Egypt, possesses one of the most ancient of civilizations. The education of children consisted chiefly in training them as members of one of the castes into which the people were divided. There were four principal castes: the Brahmans or priests, the Kshatriyas or warriors, the Vaisyas or merchants, and the Sudras or laborers, composed mainly of the conquered people. Below the Sudras was a still more degraded class, known as Pariahs or outcasts. Every native of India belonged to one or other of these castes, and all children were brought up strictly within their own. The first instruction embraced teachings and warnings suggested by the necessities of daily life, in order thus to teach the children to imitate the good. On the subsequent education the priests had the most powerful influence. They were the sole teachers. Women and the fourth caste were excluded from all education. Elementary instruction embraced only reading, writing, and arithmetic. A teacher with a staff and with an assistant holding the switch, gave instruction to boys sitting around him under the trees. In arithmetic, only the elements were taught; while writing, which was closely connected with instruction in reading, was first practiced in the sand, then on palm leaves with an iron pencil, and finally on platane leaves with ink. One child showed it to another, and one heard the other recite. Particular attention was paid to the higher schools of the Brahmans; and the educational laws, which are treated quite exhaustively in the law books, have reference almost exclusively to the Brahmans. In the learned schools in Benares, in Trizioon, and in the Nuddeah, the exoterics, to whom also members of the second and third caste belonged, were instructed in grammar, prosody, and mathematics; and the esoterics, in poetry, history, philosophy, astronomy, medicine, and law. The pupil was for five years only a hearer; after that time he was permitted to express his thoughts and doubts to the teacher, and to take part in the disputations. The whole course comprised from 12 to 20 years, during which time the scholar lived with the teacher. No regular compensation was received by the teacher, as to do so would be considered shameful, but presents were given as a remuneration. The reading of the Vedas was considered the highest instruction of the Brahmans, and was connected with various ceremonies. India possesses no theory of pedagogy; but, instead of the dry, prosaic collection of rules of the Chinese, we find here some deep pedagogical sayings in the pleasing garb of poetry, and particularly in the form of fables. The oldest of the collections of fables, the *Pantchatantra*, was written in the 5th century of our present era, and has been translated into almost every modern language. It contains numerous short sayings, extolling the advantages of education. — A new religion, Buddhism, sprung from Brahmanism: but although it had its origin in India, it was forced to retreat before the old religion, and spread particularly over China, Farther India, Mongolia, Japan, and other countries of eastern Asia. The chief aim of the Buddhists is to improve the moral life. For this purpose ten commandments have been laid down, containing, besides some excellent moral principles, rules for good behavior. Buddhism ignores the castes, though it does not absolutely prohibit them. The clergy were made the basis of Buddhistic society; whereas, in other creeds, the laity were the basis on which the hierarchy reposed. Though this creed has always been one of the most extensive in the number of its followers, it has contributed little to the progress of education. On education in ancient India, see SCHMIDT, *Geschichte der Pädagogik*, vol. I.

II. *Modern India.*—Both the Catholic and the Protestant missionaries who went to India, established schools for the education of the natives, but they reached only a small portion of the native population. By the natives themselves nothing was done to improve the system of education and instruction. The East India Company had not founded a single school until 1793. In that year, Wilberforce moved, in the House of Commons, to send school-teachers to India, in order to superintend the instruction of the people; but the India House denounced the plan as detrimental to the continuance of their rule. In 1813, parliament granted $10,000 annually for educational purposes; but the money was spent for the promotion of literary studies, rather than for education. In 1848, the lieutenant governor of Agra brought forward a scheme to give a school to every village of at least one hundred families. After three years' discussion the court of directors of the East India Company accepted the groundwork of the plan; and orders were issued that a school should be provided for every circle of villages, called *Hulkabundee*, and that the teachers should be paid by a tax of two per cent on the land revenue. The plan has been gradually developed: and government schools now exist, in regular gradation, from those which give the humblest elementary instruction to the highest colleges; and the best pupils of one grade are able to pass through the other grades by means of scholarships. To complete the system, a university was established, in 1857, at each of the three presidency capitals, Calcutta, Bombay, and Madras, on the model of the London University, for holding examinations and conferring degrees. The government institutions are intended to serve as models, to be gradually superseded by schools supported on the grant-in-aid-system—a system based on the principle of perfect religious neutrality, and on regular rules adapted to the circumstances of each province. Normal schools exist in each province for the training of teachers. The medium of education, in the elementary schools for the masses, is the vernacular languages, into which are translated the best elementary English treatises. The study of the classical languages of India is, however, still maintained. The English language is taught in the Anglo-vernacular schools and colleges for the education of the upper and middle classes of society. The governing agency of this system consists of a director of public instruction in each province, aided by a staff of inspectors. The following table gives the number of schools and colleges belonging to, aided or maintained by, the government in British India, with the average number of pupils attending them, the amount expended by the government, and the gross expenditure on account of instruction during the years 1862, 1867, and 1871 :

Year	Number of educational institutions	Average attendance	Amount expended by the gov't	Total expenditures from all sources
1862.....	13,219	350,762	£248,330	£284,076
1867.....	20,683	658,834	461,378	755,518
1871.....	25,147	799,622	649,724	1,019,418

Counting in the indigenous schools, the whole number of schools of British India (exclusive of the native states and Burma) amounted, in 1872, to 40,700; and the number of scholars, to 1,280,914. The schools which have been improved up to the government standard are divided as follows: Lower-class schools, middle-class schools, high schools, normal schools, special schools, colleges, and universities.—The number of middle-class schools, in 1871, was 2,873 (for boys 2,740, for girls 133), with 158,728 pupils (boys 151,656; girls 7,072). The number of high schools was 273, with 47,572 pupils; of these only one school was for girls. The number of normal schools was 104 (87 for males, 17 for females) with 4,346 students (4,080 male and 266 female). The number of general colleges, in 1871, was 44, of which 24 were government colleges, and 20 private and aided colleges. The number of students in the government colleges was 1,854; and in the private colleges, 2,140, making a total of 44 colleges, with 3,994 students. Besides the general colleges, there were 10 law colleges, with 684 students; 5 colleges of medicine, with 893 students; 4 colleges of civil engineering, with 549 students. Of other special schools, there were 3 schools of design and decorative art: one at Calcutta (with 50 students); one at Madras; and one at Bombay (with 90 students), besides the David Sassoon Industrial School at Bombay, with 101 students. The progress of the three universities at Calcutta, Madras, and Bombay, from the time of their foundation, in 1857, to 1871, is shown by the following table:

Year	CALCUTTA		MADRAS		BOMBAY	
	Candidates	Passed	Candidates	Passed	Candidates	Passed
1857.....	244	162	—	—	41	36
1860.....	808	414	—	8	52	23
1866.....	1,350	629	440	93	555	229
1871.....	2,877	1,601	1,701	564	1,153	231

Female education, which had been almost entirely neglected, according to the custom of the country, received a strong impulse, in 1866, from an English Unitarian lady, Miss Carpenter, who arrived in Bombay in that year. After making a tour of Guzerat, and holding several meetings in Surat, she proceeded to Madras, where she enlisted the warm sympathy and co-operation of Lord Napier, the lieutenant governor of that province. Upon arriving in Calcutta she convened a large meeting, which was attended by most of the prominent government officials. She succeeded in awakening an interest in female education; and, under her direction, a number of female schools, and also ragged schools, were established. For an account of the progress of education in India, see the official *Statement of the Moral and Material Progress of India*, published annually; also the several volumes of the *Annual American Cyclopædia;* and the *Report of the U. S. Commissioner of Education*, for 1873.

INDIANA, at first a part of the North-west Territory, afterwards formed a part of Indiana Territory, organized July 4., 1800. In 1805, Michigan was set off from it; and, in 1809, Illinois, leaving the territorial limits the same as those of the state at present. Indiana was admitted into the Union as a state, Dec. 11., 1816. Its area is 33,809 square miles; and its population, in 1870, was 1,680,637, giving it the sixth rank among the United States.

Educational History.—The duty of the state to educate its children was early recognized in Indiana. The constitution adopted in 1816 declared the general diffusion of learning and knowledge through a community to be essential to the preservation of a free government, and made it the duty of the general assembly, at the earliest practicable moment, to provide a law for a general system of education. It was not until the adoption of the new constitution, in 1851, which made it the duty of the general assembly to "encourage, by all suitable means, moral, intellectual, scientific, and agricultural improvement, and to provide by law for a general and uniform system of common schools, wherein tuition shall be without charge and equally open to all," and which provided for the election of a state superintendent of public instruction, that we have any permanent record of the condition and progress of the public schools. The act to provide for a "general and uniform system of common schools" was passed June 14., 1852; but, although in force after its publication and distribution, it did not become practically operative until the first Monday of April, 1853. This was owing to a discrepancy between the school law and the township law, so that no school officers for the township could be elected until the time for the regular election of the township trustees, in April. This law provided for the consolidation and equalization of the school funds, and for the organization of school corporations by civil townships instead of by districts, and also gave the people the power to assess special township taxes, for the building of school-houses and for the continuance of schools after the public funds were expended. William C. Larrabee was the first person elected to fill the office of superintendent of public instruction. He inaugurated the system, and at this time served two years from November 8., 1852. Caleb Mills took the office November 8., 1854, and served until February, 1857. He distributed the libraries bought with the proceeds of the tax levied for that purpose, among the townships of the state. He was succeeded by William C. Larrabee, who was again elected superintendent, and served for two years, from the second Tuesday of February, 1857. During his administration, he made many important recommendations to the legislature, in regard to the time of receiving reports and of apportioning the revenue. Samuel L. Rugg, his successor, served two years, from the second Monday of February, 1859. In his term of office, he investigated the condition of the school funds, and considered plans for their more profitable management. Miles J. Fletcher took the office of state superintendent, February 14., 1861. In the spring of 1862, he was killed in a railway accident, and Samuel K. Hoshour, D. D., by executive appointment, filled the vacancy from May 29., 1872 until his successor was elected and qualified. Samuel L. Rugg was again elected for a term of two years, commencing November 21., 1862; but, owing to an amendment in the school law, changing the time of assuming the duties of the office, he held over until March 15., 1865. George W. Hoss succeeded, March 12., 1865, serving for a term of two years. He administered the new school law, and replenished the township libraries. Being elected for a second term, he held office until October, 1868, when, by reason of his resignation, the newly elected officer, Barnabas C. Hobbs was appointed to fill out the term. During the term of office of Mr. Hobbs, the Normal School was opened, January 6., 1870. Milton B. Hopkins took the office, March 15., 1871, for a term of two years. Through his instrumentality, a law was passed abolishing the office of county examiner and creating that of county superintendent. Mr. Hopkins entered upon the duties of a second term, March 15., 1873, but did not live out this term. He died in August, 1874; and his son, Alexander C. Hopkins, by executive appointment, filled the vacancy, from August 20., 1874, until March 15., 1875, when James H. Smart, the present incumbent, entered upon the duties of the office. Six of these superintendents are now living.

School System.—The school officers of the state are the directors of the districts into which the townships are divided, the trustees of townships, members of boards of school trustees in incorporated towns and cities, county superintendents, members of the state board of education, and the state superintendent of public instruction. The *directors of school districts* act under the authority of the township trustees, and exercise quite limited powers. They preside at school meetings, take charge of the school property, and perform other duties under the direction of the trustees. Voters at school meetings may designate other branches than those required by the school law, which they wish to be taught in their respective districts. They may request a trustee to remove a teacher, and they may petition him in regard to the repairing or removal of a school-house. *Township trustees* are elected by the people biennially and are the school trustees for their respective townships. It is their duty to take charge of the schools, employ teachers, build school-houses, provide furniture, apparatus, etc., take the enumeration of the school children, and to cause to be held, monthly, township institutes for the instruction of the teachers. They may also provide township graded schools and arrange for admission into them from the other departments. The *school boards* of cities and towns consist of three members in each. Those in cities are appointed by the common council, for three years, one member being appointed annually, in June. Those in towns are appointed by the civil trustees of the town, in the same manner as the city trustees are appointed. School matters in cities and towns are more exclusively in the hands of school trustees, than in townships, inasmuch as the law does not provide for school meetings in the former. The law permits school boards of cities and towns to employ *superintendents* for their respective corporations. The *county superintendent* is appointed by the township trustees, biennially, in June; and he must have had two years' successful experience in teaching. It is his duty to examine all applicants for license to teach. These examinations are held on the last Saturday of each month. The branches required by law are orthography, reading, writing, arithmetic, geography, English grammar, physiology, and United States history. It is his duty to visit the schools of the county at least once each year, to attend township institutes at least once each month, to hold a county institute annually, and to receive reports from school trustees and collate the same, and forward them to the superintendent of public instruction. He may also hear and determine appeals from the decisions of township trustees, in sundry minor matters; and finally, he has the general superintendence of the schools in his county, except in cities and towns in which superintendents may have been employed. The *state board of education* consists of the state superintendent, who is, *ex officio*, president; the governor; the presidents of the state university, the normal school, and Purdue University; and the superintendents of the three largest cities of the state. The board meets as often as occasion may require. It appoints the trustees of the state university and the official visitors of the normal school. It prepares printed lists of questions which are sent out to the county superintendents monthly, and which are by them submitted to the teachers who apply for licenses. The state board is also empowered to grant to teachers of high character and standing, state licenses which are valid for life. The board takes cognizance of such other educational matters as may properly come before it, and makes such recommendations to subordinate officers and to the legislature as it may deem advisable. The *state superintendent of public instruction* is elected by the qualified voters of the state, at a general election, for a term of two years. He is charged with the administration of the system of public instruction and with the general superintendence of the business relating to the common schools of the state, and of the school funds and revenues appropriated for their support. It is his duty to render an opinion, in writing, to any school officer so desiring, in regard to the administration or construction of the school law. He must also visit every county in the state and examine the auditor's books and records, relative to the school funds, revenues, etc. He must confer with the school officers, and make public addresses as occasion may require.

School Fund.—There are two sources of revenue for the support of the public schools: (1) the interest on the school funds, and (2) the proceeds of the tax levied by the state and by local authorities. The school funds are divided into two classes: (1) The common-school fund, the sources of which are the surplus revenue fund, the saline fund, the bank tax fund, the county seminary funds, fines assessed for breaches of the penal laws of the state, all forfeitures which may accrue, all escheated lands and estates, the proceeds of the sales of the swamp lands, granted to the state of Indiana by the act of Congress of 1850, and the fund arising from the 114th section of the charter of the State Bank of Indiana; (2) The congressional township fund, which is derived from the sale of the 16th section, in each township, set apart to the townships, by Congress, for school purposes. The common-school fund amounts to $6,313,247, and the congressional township fund amounts to $2.398,072, making the total school fund of the state $8,711,319. These funds can never be diminished, and the proceeds of them must be used for tuition purposes only.

School Taxes.—The state levies annually a tax of 16 cents on each one hundred dollars, which, with the proceeds of the common-school fund, is apportioned to the various school districts, in proportion to the number of children between the ages of 6 and 21 in each. The local authorities have also the right to levy a local school tax of 25 cents on each one hundred dollars, which must be expended in the township, town, or city, in which it is levied. They have also the right to levy a local tax of 50 cents on each one hundred dollars, to be used in purchasing grounds, building school-houses, and supplying the necessary furniture and apparatus. In addition to all this, the civil authorities in cities and towns have the right to issue bonds to provide for the payment of debts contracted in the purchase of grounds and the erection of buildings thereon by school authorities. There can be only $50,000 worth of these bonds in circulation at any one time; and, when issued, it is the duty of the civil authorities to provide for their payment, by the levy of a special tax therefor, provided that said tax shall not exceed, in any one year, more than 50 cents on each one hundred dollars. The total amount of school tax possible in cities and towns, in any one year, under the law of the state, is as follows:

State tax on each $100......	$0.16;	on each poll,	$0.50
Local tuition tax on each $100	0.25	" "	0.50
" special " " "	0.50	" "	1.00
" bond " " "	0.50	" "	1.00
Total amount.....	$1.41	....	$3.00

In townships the limit is $1.16.

Educational Condition.—The total number of district schools in the state is 9,236; of city systems, 40; of town systems, 202; and the number of school-houses is 9,307. The number of township and district graded schools is 396; of ungraded schools, 8,940. The estimated value of school property is $10,870,338. The following are additional items of the school statistics for 1875—6:

School population, white males,	340,514	
white females,	317,434	
Total white,		657,948
colored males,	4,940	
colored females,	4,848	
Total colored,		9,788
Total school population....		667,736
Number of pupils enrolled, whites,	495,711	
colored,	6,651	
Total enrollment.....		502,362
Average daily attendance, estimated at.....		315,000
Number of teachers, male and female........		13,133
Number of female teachers, estimated at....		6,506
School fund......................	$8,799,191	
Total receipts.....................	4,948,879	
Expenditures for tuition...........	2,830,747	

Normal Instruction.—The State Normal School at Terre Haute, established in 1870, occupies one of the finest school buildings in the state. The faculty of the institution embraces 9 instructors, including the president; while 4 others are employed in the model schools connected with it. The number of students, from Jan., 1873, to Dec., 1874, was over 401, of whom 187 were males, and 214, females. The whole number of persons that had received instruction in this school, from 1870 to 1875, was 855. Two courses of study are pursued: one elementary, including the branches required to be taught in the common schools, with instruction in the theory and practice of teaching; and the other advanced, including all the subjects taught in the high schools of the state, and designed to prepare teachers for employment in these schools. In the latter course, special prominence is given to the study of languages, especially French and and German. The Northern Indiana Normal School, at Valparaiso, organized in 1873, is a private institution. — Teachers' institutes constitute, in this state, a very important instrumentality for the professional instruction of teachers. The several county superintendents are required to hold a county teachers' institute at least once a year in each county; besides which, at least one Saturday in each month, while the public schools are in session, is required to be devoted to township institutes. In 1875, the number of county institutes held was 91; and of township institutes, 4,080.

Secondary Instruction.—The number of pupils in the 21 approved high schools in the state was reported, in 1874, as 13,342; the number of teachers employed was 350, of whom 223 were males, and 127 females. These schools are so organized as to be preparatory schools to the state university. No uniform course of study is prescribed; but the candidates for admission to the university, in 1874, were examined in geography, English grammar and sentential analysis, geometry, and Latin, including Cæsar and Virgil. In a table appended to the state report for 1874, 9 private or denominational institutions for secondary instruction are enumerated, having, in the aggregate, 810 students in the academic classes, and 547 in the preparatory departments. Several private schools and academies of this grade reported to the U. S. Bureau of Education, in 1874. There were, at that time, also, 10 business colleges, with 31 teachers and 1,697 pupils. The courses of study in these schools ranged from 6 months to 5 years.

Superior Instruction.—First among the institutions of this grade, stands the Indiana University (q. v.), at Bloomington, which is closely connected with the school systems of the state by an arrangement which admits to the freshman class, without further examination, all graduates of high schools approved by the state board of education, who present certificates that they have passed a satisfactory examination in the preparatory course of study. Other institutions for superior instruction are given in the following table:

NAME	Location	When founded	Religious denomination
Concordia College....	Fort Wayne	1839	Ev. Luth.
Earlham College.....	Richmond	1857	Friends
Ft. Wayne College....	Fort Wayne	1846	M. Epis.
Franklin College.....	Franklin	1844	Baptist
Hanover College.....	Hanover	1827	Presb.
Hartsville University	Hartsville	1850	U. Breth.
Indiana Asbury Univ.	Greencastle	1832	M. Epis.
Moore's Hill College.	Moore's Hill	1854	M. Epis.
N. W. Christian Univ.	Indianapolis	1857	*Christian*
Ridgeville College....	Ridgeville	1867	F. W. Bap.
St.Bonaventure's Coll.	Terre Haute	1872	R. C.
St. Meinrad's College	St. Meinrad	1861	R. C.
Union Christian Coll.	Merom	1859	*Christian*
Univ. of Notre Dame.	Notre Dame	1842	R. C.
Wabash College......	Crawfordsville	1832	Presb.

Professional and Scientific Instruction.— Purdue University, at Lafayette, is an industrial university, and embraces schools of agriculture, mechanics, mining and engineering, industrial art, and military science; besides this, there is the Terre Haute School of Industrial Science, at Terre Haute. The schools of law are the law department of the Indiana University, and the law school of the North-western Christian University; and the medical schools are the College of Physicians and Surgeons of Indiana, the Indiana Medical College, connected with the Indiana University, and the Medical College of Evansville.

Special Instruction.—This department of education is represented by the Indiana Institution for Educating the Deaf and Dumb, at Indianapolis, which, in 1874, had 15 instructors and 333 students; and the Indiana Institute for the Blind, at Indianapolis, which, in 1874—5, had 109 pupils, and a corps of instructors including a superintendent, 5 teachers in the literary department, 3 in the industrial, and 3 in the musical, besides 4 household officers.

Educational Libraries.—The total number of volumes in the various educational libraries of the state is reported as 357,545; of which the township libraries contained 253,545 volumes, the city libraries were estimated to contain 50,000 volumes, and the college libraries, 54,000 volumes. The law does not, at present, provide for a general tax for the support of public libraries; but it permits the founding of library associations, and authorizes the common councils of cities to take stock in such associations, and levy the annual tax of 2 cents on each $100 in support of the same.

Educational Journals.—The only educational journal published in the state is *The Indiana School Journal*, the official organ of the state superintendent of public instruction. *The Northern Indiana Teacher* was formerly published at South Bend.

INDIANA ASBURY UNIVERSITY, at Greencastle, Ind., commenced in 1832, and chartered in 1837, is under Methodist Episcopal control. The first class graduated in 1840. It has an endowment of $180,000, and property to the value of $150,000. Tuition is free. The libraries contain about 10,000 volumes. The institution has philosophical and chemical apparatus and a cabinet of minerals and fossils. Both sexes are admitted. The regular courses are the classical and philosophical, but an elective course may be pursued. Opportunity is afforded for normal instruction, and there is a Biblical course for theological students. Indiana Medical College is, by recent action of the proper authorities, made the medical department of Asbury University. The medical school is located at Indianapolis, and has 9 professors and 6 lecturers. There is also a preparatory department. In 1875-6, there were 12 instructors, 509 students (256 collegiate and 253 preparatory), and 565 *alumni*. The presidents of the university have been as follows: Bishop Matthew Simpson, D.D., 1839—48; the Rev. Lucien W. Berry, D. D., 1849—54; the Rev. Daniel Curry, D. D., 1854—7; Bishop Thomas Bowman, D.D., LL. D., 1858—72; the Rev. Reuben Andrus, D. D., 1872—5; and the Rev. Alexander Martin, D. D., the present incumbent, appointed in 1875.

INDIANA UNIVERSITY, at Bloomington, Ind., was chartered as a college in 1828, and as a university, in 1839. It is non-sectarian, being under state control. It has two fine buildings, a library of over 6,000 volumes, a chemical laboratory, a museum containing fossils, minerals, zoological specimens, etc., and productive funds to the amount of $110,000; besides which it receives annual appropriations from the state. The value of its buildings, grounds, and apparatus is $200,000. Both sexes are admitted. Besides the preparatory and the collegiate department, the latter having a classical and a scientific course, there is a department for the study of law. The medical department was discontinued in 1876. The number of instructors and students in the various departments of the institution, in 1876, was as follows:

Departments	Instructors	Students
Preparatory	4	142
Collegiate	10	132
Law	2	36
Total	16	310

The Rev. Lemuel Moss, D. D., is (1876) the president.

INDIANS, American. The earliest attempt at the civilization of the American Indians was made by the Spanish government, in Mexico and South America, at the time of their conquest, when the sons of chiefs and princes in Mexico and Peru were educated, and endowed with the rank of Spanish nobles. Many families in Spain, to this day, boast of their Mexican or Peruvian descent. Their further education was conducted through the agency of missions, the most celebrated of which were those of Paraguay. The education of the North American Indians was begun, also, by Catholic missionaries in Canada and Louisiana, Florida, Mexico, and California. It has been participated in gradually by other denominations, and has followed the line of the frontier to the present time—the religious character of the instruction imparted being gradually eliminated as the separation of church and state approached completion. The Puritans, at an early date, established missions at Nantucket and Martha's Vineyard, at Newtown and Plymouth, Mass., and in Connecticut, the laborers principally being the Mayhews, Eliot, Cotton, and Sargeant. The famous Indian Bible of Eliot was prepared by him for the instruction of converts. The Indian School of Dr. Wheelock, now Dartmouth College, and Harvard University, at the time of its foundation, gave instruction to Indians, the latter with the intention of using them as teachers of their own race. Only one Indian, however, has ever graduated there — Caleb Cheeshahteaumuck, in 1665. The Brainerds, who labored in New Jersey and Pennsylvania, the Moravians, among the Delawares, and the Society of Friends, have all produced results more or less important. Nearly all of the large Protestant denominations have labored in this field, either separately or through associations organized for this special purpose. The Episcopalians established an Oneida mission; and, the Methodists, in 1819, founded missions among the Wyandots, Iroquois, Creeks, Ottawas, Shawnees, Dakotas, and the Indians of Oregon. The Southern Methodists, the Presbyterians, in 1837, the American Missionary Association, American Indian Missionary Association, Baptist Home Missionary Society, and the Southern Baptists have also established missions and done effective work. The Catholics, also, have not been behindhand in their efforts to educate the savages of North America. Their missionaries, Le Jeune, Lalemant, Breboeuf, and Marquette were pioneers in the work; and their labors, extending from Canada along the frontier to Texas, form an exciting story of devotion and self-sacrifice. In the United States, the Indians may be divided into three classes, according to their surroundings and consequent mode of life; namely, (1) those who are closely and entirely surrounded by whites; (2) the wild Indians of the plains, who still adhere to their nomadic mode of life; and (3) an intermediate class having the whites on one side and the wild tribes on the other. It is in this last class only that the experiment of civilization is operative, the reclaiming of the first class being considered accomplished, and that of the second class, impracticable. The following figures are taken from the report of the United States Commissioner of Education for 1874:

Number of Indians in the United States, exclusive of those in Alaska	275,003
Number of school buildings upon Indian reservations	232
Number of schools upon Indian reservations	345
Number of scholars: males 5,797; females 5,161	10,958
Number of teachers	407
Number of Indians who can read: adults, 1,392, youths 2,616	4,008
Number of Indians who have learned to read during the year	961

It will be seen from the foregoing, that the proportion of scholars, among the Indians, is about 1 in every 26. Of those in New York, 1418, out of a total of 5,140, attend school. These Indians, of course, being few in number and every-where surrounded by civilization, have unusual advantages over their brethren of the Far West. The total number of Indians east of the Mississippi, excluding those of New York, is 18,505; scholars, 2,599, or about 1 in 7. It is in the Indian Territory, however, that the most extensive and interesting attempts at education have been made. (See INDIAN TERRITORY.) The prospect of the education and final civilization of the Indians brought under the charge of the agencies, is considered promising; though the want of funds, and the difficulty the Indians have to encounter in learning a strange language, have thus far retarded their progress. The number of Indians in British America is estimated at 150,000. For information in regard to them, see the articles on the several British provinces of North America.

INDIAN TERRITORY, an unorganized portion of the United States, embracing an area of 68,901 square miles. In 1870, the population was stated at 68,152, of whom 2,409 were whites, 6,378 colored, and 59,367 Indians; of the latter, 24,967 were living on reservations, the nomadic Indians being estimated at 34,400. Indian Territory was set apart by the act of Congress, passed June 30., 1834, for the regulation of trade and intercourse with the Indians. This act declared that "all that part of the United States west of the Mississippi and not within the states of Missouri and Louisiana, or the territory of Arkansas", should for the purposes of the act be considered the Indian country. This vast tract formed a considerable portion of the Louisiana purchase of 1803; but the Indian territory has been greatly reduced by the formation of states and territories out of it; so that, at present, it is comparatively of small extent.

Educational Condition. — Indian Territory comprises six agencies and thirty-six different nations and tribes, numbering (according to the report of the U. S. Commissioner of Education for 1874) over 76,000 persons. The total number of schools, in 1874, was 172, with 177 buildings, 189 teachers, and 4,727 pupils. The four principal nations of the territory (under the care of the *Union Agency*) are the Cherokees, reported as numbering 17,217 persons (including 1,300 colored), the Seminoles, 2,433; the Creeks, about 13,000 (including 2,000 colored); and the Choctaws and Chickasaws (confederated), 22,000. These nations occupy a territory that has, in the aggregate, an area of 28,000,000 acres, of which about 150,000 are under cultivation. Each nation has its own school system, including superintendents, school board, etc. The Cherokees are the most advanced. Their system embraces a superintendent of public instruction, elected by the national council for a term of two years; and a board of education, consisting of four members including the superintendent, who is a member *ex officio*. It is empowered to establish rules and regulations for the management of the schools, and to prescribe the text-books to be used. The common schools are divided into three grades: primary, intermediate, and grammar schools. The school year consists of nine months and a half, commencing on the first Monday in March, and is divided into two terms of twenty weeks each. The regular school day is six hours; but for pupils under eight years of age, it is only four hours. The school age is from 6 to 18. All teachers are required to be examined and licensed by the board of education. There are 3 school districts, each having a school commissioner, who has the general management and supervision of all the schools in his district; but an appeal from his decisions may be taken to the board of education. In 1874, there were in the Cherokee nation, 68 schools, taught chiefly by natives, in their vernacular, but also learning English. The number of pupils enrolled in these schools was estimated at 2,500; and the average attendance, at 2,000. The school fund amounted to $2,909,113, upon which the annual interest was $161,889. — The Choctaws and Chickasaws, numbering about 22,000, in 1874, had 67 day schools, chiefly boarding-schools, at which the estimated attendance was 1,650. The Creeks had 31 schools, with 750 pupils; and the Seminoles, 5 schools, with about 120 pupils. — The Cherokees maintain a female seminary, with about 70 pupils; also an orphan asylum, providing for about 100 children. Mission schools are supported in the other agencies, as follows: *Quapaw Agency*, 3 mission schools (on the industrial plan) and one day school, with a total enrollment of 232 pupils; *Sac and Fox Agency*, a manual-labor school, with 28 pupils, and the Shawnee day school, with 20 pupils; *Osage Agency*, a manual labor school, with 90 pupils, a mission school, with 35 pupils, a day school for the Kaws, with 54 pupils, and a boarding-school; *Wichita Agency*, 2 schools, one a day school, and the other a boarding-school, whole attendance 111 pupils; *Kiowa Agency*, 2 boarding-schools, having 84 pupils. — See *Report of U. S. Commissioner of Education* for 1874.

INDIVIDUALITY, that distinction of character which is produced by mental or moral peculiarities. The value of this element of character, in the affairs of life, can hardly be overestimated. Goethe considered that its preservation and development should be the sole end of a true education; and Mill declares that it is the great want of our time. Its rarity, however, is a necessary consequence of the leveling tendency of the age in which we live. The average experience of the world at any period, is embodied in the prevailing customs of that period. In that sphere, the great bulk of the world's activities move with unthinking regularity,—the force of education making it natural, and absorption in the struggle for existence allowing no time for any thought of change. The increase of facilities for the spread of knowledge, also, adds directly to the coercive power of public opinion by extending its sway; and, while it enlarges the sphere of custom renders its influence more uniform and more difficult to be opposed. Yet its boundaries must be steadily extended, or life degenerates into mere routine. To the man of individuality, whether as artist, poet, preacher, philosopher, or thinker of any kind, is committed the task of enlarging that sphere, and setting up new ideals. In daily life, also, a thousand emergencies arise, demanding instant action for which experience furnishes no guide. The ordinary mind is paralyzed, and turns instinctively to the man of genius, or exceptional power, for guidance. Individuality thus becomes the pioneer of progress. When we remember, further, that individuality furnishes the common ground on which genius and insanity meet, and that its cultivation, according as it is proper or improper, may minister in a hundred ways to the happiness and well-being of the individual and the race, or to untold misery for the one, and loss to the other, its claim for consideration in any educational scheme will not probably be denied. Unfortunately, however, the difficulty of properly treating it is commensurate with its importance, the consideration of it going, as it does, to the very root of every system of education. All educational plans presuppose uniformity in the minds of the children to be subjected to their influence. Their fundamental principles, being only conclusions drawn from the observation of a large number of individual instances, necessarily employ themselves with the resemblances to be found among those instances, to the exclusion of the differences. The question always is, "Under given circumstances, how would a majority of minds act?", little attention being paid to the minority. And the larger the majority, the more readily is the conclusion drawn from their uniform action accepted as a rule, and the less likelihood is there that any attention will be paid to the insignificant minority. Yet it is in this minority, that the minds possessed of decided individuality will be found. In many cases, no doubt, private instruction would produce more satisfactory results in developing exceptional powers; but circumstances frequently do not admit of this, and the teacher, in that case, must endeavor to supply the deficiency, as far as possible, by special attention. For that highest from of individuality, called genius, the ordinary school system can, probably, do little in the way of direction, its very nature leading it to reject all external guidance; it is a law unto itself. (See GENIUS.) But for that great army of thinkers and workers whose peculiar fitness for special pursuits is early manifested, and whose earnestness and patient labor, in a thousand varied ways, are daily enlarging the domain of knowledge, the advantage of a well-digested course of study and moral training can hardly be questioned. One of the most effective aids for resisting the tendency to reduce all minds to uniformity, and for giving to individuality its due prominence, consists in keeping constantly in mind the modern idea of education; namely, that it is a development from within of capacities there existing. The mind is not a vessel into which knowledge is to be poured till it is full, but a plant on which education is to act, as the sun and rain act, drawing out and expanding it into leaf, flower, and fruit, *according to the plan on which it is constructed.* And just as the gardener places different plants in different soils, and subjects them to varying amounts of sunshine and moisture, expecting diversity of results, and recognizing in that diversity his success, so the teacher, while subjecting all to the same general treatment, as the gardener does, should seek to vary his methods, in order to accommodate them to the peculiarities of the pupils under his care. The first step to this end must be a determination of what those peculiarities are. In this search, many circumstances may temporarily mislead him. In his first day's acquaintance with a pupil, for instance, he may fancy he discovers in him a natural aptitude for a particular study, which a longer acquaintance will show to be due to some slight previous training in that study — in which case the aptitude will entirely disappear as soon as he has reached the end of his fortuitous knowledge; or he may discover, toward some particular branch, a disinclination which is only the natural disgust or reaction of the mind on account of the too early presentment of that branch to his immature powers; or, in a third case, an inclination may be shown, which is produced solely by some poetical aspect of the study, due to early experience or association, and has no connection with the essential nature of that study. A boy, in this way, for instance, might show a quasi-love for botany from having been brought up among flowers, the forms and colors of which appealed powerfully to his love of beauty; or a similar love of astronomy or microscopy from having had the run of an observatory or an optician's shop. But no teacher of discernment will long be deceived by such superficial knowledge or inclination, if opportunities for examination are afforded him. A more dangerous misapprehension, however, exists frequently in regard to moral powers. This often happens in cases of what may be called negative individuality — cases in which the faculties necessary for the future well-being, instead of being abnormally developed, seem to be entirely wanting. These mistakes, unfortunately, are common, and are attended with the gravest consequences. An obtrusive show of virtue rouses suspicion at once, and leads to detection; but the want of it is, in many cases, easy of concealment, and, escaping notice, escapes, also, correction, and the error appears later in life, bringing disgrace and ruin. Dishonesty, both in word and deed, is one of the commonest of these defects of character. Tyrannical government in childhood and early youth is the fruitful parent of this evil. Self-preservation, the strongest instinct of its nature, leads the child to the use of deception as a shield from punishment; and it uses it the more readily because it cannot understand the baseness of it.

Having determined the pupil's distinguishing trait, the treatment should be a partial cultivation of the prominent faculty, with a special cultivation of the others. An entire suppression of this ruling faculty would result in disgust with the enforced attention given to the others; while an exclusive cultivation of it — which is almost always the result, when the pupil is allowed to "follow his inclination" — would end only in one-sidedness, or want of balance. As the constant disposition of the pupil, under the treatment here prescribed, would be to neglect the distasteful studies for the favored one, the efforts of the teacher should be exerted to make the former as attractive as possible, by constant references to the latter by way of illustration. By a skillful teacher, this may be done to a greater extent than might at first appear. A judicious system of rewards, also, might be devised, to favor proficiency in the studies likely to be neglected. In the elaboration of the plan, specific rules will be of little use. The highly developed faculties, mental and moral, exist in such varied combination, and the daily circumstances and influences surround and govern in such a way, as to make of each case, a complicated problem, requiring special study. The general plan, therefore, can only be indicated, and its fulfillment committed to the discretion of the teacher. In it, he will find ample field for the exercise of his skill and ingenuity. His genius for teaching will be nowhere more apparent. — In addition to the case of negative individuality, there is another, which may be called that of general negative individuality, in which the faculties are evenly developed, but are all below the average. This condition is equivalent, in its results, to that of a mind with faculties of normal strength, too evenly developed, the resulting character, in both cases, being one of mediocrity, which manifests itself in a general want of decision or infirmity of purpose. Such characters are never themselves in the presence of a superior mind. Their negative virtue becomes as injurious as positive vice; for, as all men are compelled constantly, under stress of daily circumstances, to act, the action of such persons is never their own, but is merely a reflection of that of the more powerful minds by whom they are surrounded. The demagogue and the quack find in such characters their pliant instruments. This result, therefore, should be carefully guarded against, in every country especially, where political power in the hands of the masses is great or increasing. The teacher's duty, in this case, is perhaps the most difficult of all, it being nothing less than the creation of individuality. This object, however, is worthy of his highest efforts, since the element he is endeavoring to evoke is the most valuable of all the products of a true education — the personal quality whose moral aspect is self-respect, as well as self-reliance, and which constitutes the surest basis for a correct life, whether as an individual or a citizen. (See CHARACTER, DISCERNMENT OF.)

INDO-GERMANIC LANGUAGES. The name *Indo-Germanic* is applied to a large number of languages which comparative philology has proved to be of a common origin. It was chosen to indicate what was believed to be the eastern (India) and the western (Germany) boundary of the extent of these languages. Since the Celtic has been recognized as belonging to the family, the name is no longer adequate, and other names, as Aryan, Indo-European, Japhetic, Sanskritic, have been proposed and sometimes used instead of it; but still Indo-Germanic is the name generally preferred by writers on the subject.—The Indo-Germanic languages, according to the common consent of all prominent writers on the subject, embrace the following branches: (1) Germanic or Teutonic; (2) Slavic; (3) Lithuanic; (4) Celtic (Irish etc.); (5) Italic (Latin etc.); (6) Greek; (7) Iranian or Persian; (8) Sanskritic or Indian. Some writers add an Illyrian branch, of which the modern Albanian is regarded as a relic; others divide somewhat differently, regarding the Slavic and Lithuanian not as two different branches, but as only one branch; but they all agree as to the affinity of the eight branches which have been enumerated. From the time when Cyrus founded the Persian empire until the present day, nearly all the leading civilized nations of the globe have spoken Indo-Germanic languages, and to-day these languages are the vehicle of thought for nearly all Europe (the only exceptions being the Turkish, the Hungarian, the Finnish, and the Basque languages), for the entire civilized population of America and Austialia, and for the larger portion of Asia. The comparative study of the Indo-Germanic languages has cast a great deal of light upon all the languages which are taught in the English-speaking world—the vernacular, the classical, and the foreign. Not only does this study convey a clearer view than was formerly attainable of the peculiar kinship existing between all these languages, but, especially by the aid of the Sanskrit, explains many points which were formerly obscure, and enables the student to trace the origin and gradual growth of most of the grammatical forms. The influence is most apparent in the Latin and the Greek, the relations of which to the family have been best set forth by Corssen (*Lateinische Sprache*) and G. Curtius (*Griechische Etymologie*). The standard grammars of these languages, especially those written during the last twenty years, have generally been benefited by the results of comparative philology; and teachers who understand the chief Indo-Germanic languages find it easy, without any need of additional time, to combine with instruction in Latin and Greek, a rudimentary knowledge of the Indo-Germanic system. And it is safe to say, that, henceforth, it will be impossible for any grammarian to surpass, or even to equal, the best Latin and Greek grammars now in use, unless he possesses a good knowledge of the relation of the classic to other Indo-Germanic languages, and especially to Sanskrit. — The study of English in the lower grades of instruction has been indirectly benefited by the progress of these researches, because to them we are largely indebted for a more intelligent class of teachers, and a much superior class of text-books. In the more advanced grades of instruction, the course of studies can be so arranged — and notable attempts have recently been made in this direction—as to embrace an introduction of the student to a rudimentary acquaintance with some of the chief results of Indo-Germanic philology. (See ENGLISH, STUDY OF.) More detailed information on this subject may be found in Max Müller's, and in W. D. Whitney's *Lectures on Languages*. Comparative grammars of the Indo-Germanic languages have been written by

Bopp, Schleicher, and Rapp; a dictionary, by Fick. A collection of comparative grammars on the eight branches of the Indo-Germanic languages was begun in 1876 (*Bibliothek indogermanischer Grammatiken*, Leipsic), and will embrace (1) Indian Grammar, by Whitney; (2) Iranian Grammar, by Hübschmann; (3) Greek Grammar, by Meyer; (4) Italic Grammar (embracing Latin, etc.) by Bücheler; (5) German Grammar, by Sievers; (6) Irish (Celtic) Grammar, by Windish; (7) Lithuanian Grammar, by Leskien; (8) Slavic Grammar, by Leskien. An introductory volume by E. Sievers contains the *Outlines of Phonetic Physiology* (*Grundzüge der Lautphysiologie*) as an introduction to the study of the phonology of the Indo-Germanic languages.

INDUCTIVE METHOD, in education, is but another name for the *developing method* (q. v.). It is so called because it is based upon the principle of logical induction, or the process of deriving general principles from an observation and comparison of individual facts. Instead of teaching definitions, principles, and rules arbitrarily, and illustrating them by facts, the teacher who uses the inductive method, calls the attention of the pupil to a sufficient number of the facts to enable him to find the principle or rule for himself. The learning of the definition, which, in the deductive method, is the first thing to be done, in the inductive method, is the last step in the process. Most text-books follow the deductive method; but the most effective elementary instruction is inductive.

INDUSTRIAL SCHOOLS. The term *industrial education* is used to designate the training of pupils, not only in the common branches of instruction, but in certain industrial or business pursuits. An *industrial school*, in the widest sense of the word, denotes any school for teaching one or several branches of industry; but the special schools of this kind, and, in particular, those of a higher grade, are more generally comprised under the name of technical schools (see TECHNICAL EDUCATION); and the name industrial school is usually restricted to a school for neglected children, in which training in manual labor or industrial pursuits constitutes a prominent feature of the plan of education. The common schools, however, sometimes have classes, in which children are instructed in certain industrial pursuits. The idea of providing for the instruction of children in manual labor appears to have originated in the desire to enable poor children to earn as early as possible their daily bread. In England, Chief Justice Hale recommended, about 1676, to parliament to establish in every parish an industrial school. In 1705, Locke laid before the English parliament a plan to counteract the spread of pauperism, and to this end, proposed the establishment, in each parish, of labor schools in which the children of the poor, from 3 to 14 years of age, were to find lodging, board, support, and occupation. Parliament, however, rejected the bill which embodied this idea, and a similar attempt made, in 1796, by Pitt, equally failed. In Italy, canon Odescalchi founded, in 1686, a great charitable institution under the name *Ospizio apostolico di San Michele*, which, besides other departments, contained an industrial school for both boys and girls. The girls were instructed in needle-work; and a number of workshops were fitted up for the boys, among which they were at liberty to choose. This example was followed by many other institutions, and the instruction of girls in housework and needle-work, and of the boys in some mechanical trade, became a general feature of the Italian orphan and foundling asylums. The first practical attempt, in Germany, was made by A. H. Francke, who introduced in his *pædagogium* instruction in turning and glass-grinding. An attempt made by Hecker, the founder of the first real school, to train his pupils in the cultivation of mulberry-trees and the rearing of silkworms, was abandoned soon after his death. The Austrian educator Kindermann conceived the idea of introducing industrial instruction into the common school, and succeeded, in the course of a few years, in organizing industrial schools in more than 200 places. The proposition that all children should receive at school instruction in manual labor, as well as in book learning, found an influential supporter in the philosopher Kant, and the scheme of national education proposed by Fichte likewise combined learning with labor. Pestalozzi also endeavored to train his pupils in various industrial arts as well as in books; and his ideas were more fully carried out by Fellenberg, and especially by Wehrli. Salzmann, in the famous institution of Schnepfenthal, gave to his pupils, outside of the regular school hours, manual work in the garden and field—exercises in turning and planing, in basket-making, and other occupations of a similar character. In Würtemberg, the government took great interest in the labor school, and ordered that schools of this kind should be organized in connection with every common school, and that all the girls should be instructed, during three or four hours a week, in needle-work. In several other states of Germany, as well as in Sweden, Belgium, and other countries, courses in industrial education have been arranged on a large scale, in close connection with the common schools; and the children are trained not only for the common pursuits of life, but for the special branches of industry prevailing in their particular locality. The idea that the pupils of common schools should be trained in industrial occupations was also conceived by Froebel, the founder of the *kindergarten*; and one of his most enthusiastic adherents, Georgens, endeavored to develop this idea theoretically, as well as practically. The German teachers' convocation to which an elaborate plan for embodying manual labor with the course of instruction in common schools was submitted, refused to commit itself in favor of any such scheme; but it adopted a declaration that the question, what kinds of labor should be admitted into the course of instruction, how they should be organized, and in what order they should follow one another, is one of the great educational questions of the day.—One branch of industrial pursuits, needle-work, has at present been almost universally introduced into the common schools of Germany and other countries. Two afternoons in each week are set apart for the instruction of girls, by a competent person, in the art of sewing, the pupils beginning as early as six years of age, at first using paper. They are also taught to knit, each girl furnishing her own material and keeping the product of her labor. When they have learned to hem, the next step is mending. From plain sewing, mending, and knitting, the pupil advances to fine needle-work, tatting, and *crocheting*. Some of the tapestry work of the older pupils is often so beautiful in design and so artistic in execution as to challenge general admiration." (See J. F. Myers, in the *Report of the U. S. Commissioner of Education*, 1873.)

In England, before any grant is made to an elementary school, the educational department must be satisfied that the girls in the day school are taught plain needle-work and cutting out, as a part of the ordinary course of instruction. Plain needle-work is understood to include darning, mending, marking, and knitting; but no fancy work of any kind can be done in school hours. In the United States, Massachusetts has given the greatest attention to this subject. A report of the committee on industrial schools, made to the board of education, in 1873, recommends that sewing, which is now taught in three classes of the girls' grammar schools, be carried forward into all the classes, by a gradual and progressive change, which is not to interfere with the pupils' intellectual culture and training. They proposed, also, that, as instruction in sewing was thus extended in the number of classes to which it was imparted, it should be enlarged in the character and practical value of the work performed, and that, certainly in the first and second, and perhaps in the third classes, instruction should be given in cutting, shaping, fitting, and completely making girls' and ladies' garments, the requisite materials for this instruction to be furnished by the city, under the supervision of the committee on accounts. The city superintendent of Providence, R. I., stated in his report for 1873—1874, that the sewing department in the schools of that city was producing the happiest results. Nearly 600 children, he reported, were taught every week to use skillfully their needle, and more than 100 girls who received, in the public schools exclusively, instruction in the use of the needle, were, he said, earning from $4 to $12 a week. In private female institutions, needle-work as a branch of instruction, has been quite generally introduced, and has come to be looked upon as an indispensable requisite in the course of instruction. As regards the male departments, of public schools, the introduction of industrial drawing into all schools is now strongly urged by many educators. The legislatures of Massachusetts and New York have taken the lead in this question, and ordered its introduction into all the common schools of the respective states. (See Art-Education, and Drawing.)

Special attention to industrial occupations is given in most of the orphan asylums, and in reformatory and charitable schools. These schools must not only give to their pupils the instruction which other children receive at school, but they are expected to furnish, at the same time, a substitute for home education, and to prepare their pupils, in the best possible way, to earn their daily bread when the time of their discharge from the school arrives. It is, therefore, not only desirable but indispensable for a school of this kind to provide for industrial instruction. It is gratifying to learn, from the annual reports of the U. S. Commissioner of Education, that the number of orphan asylums which have opened, or have arranged to open, an industrial department, is increasing. The importance of this subject cannot be too strongly urged upon the attention of all who found, support, patronize, superintend, or conduct institutions of this kind. For the girls, house work and sewing commend themselves, at first sight, as the most appropriate branches; for the boys, the instruction should consist in preparing them for some industrial occupation in life. The extent and the variety of this instruction will, of course, depend on the resources of the institution. The most extensive industrial training given in any charitable institution, as far as is known, is in Girard College, Philadelphia. In 1864, a chair of industrial science was established, embracing the practical and theoretic teaching of various handicrafts. The branches of labor in the work room thus provided for were type-setting, printing, bookbinding, type-founding, stereotyping, turning, carpentering, daguerreotyping, photography, electrotyping, electroplating, and practical instruction in the operation of the electric telegraph. Shoe-making has been taught and successfully carried on since 1871. (See Orphan Asylums, and Reform Schools.)

The great importance of industrial education in evening schools is too evident to need any discussion. The technical instruction which the immense majority of mechanics receive is insufficient; and their success in life depends, to a great extent, on their subsequent self-education. Any aid which can be given to them in their efforts to improve their education, is, therefore, of incalculable benefit. How well this is understood and appreciated by them is clearly indicated by the large attendance at such evening schools as afford the desired instruction. (See Evening Schools.) On the industrial schools of Germany, see Schmidlin, *Oeffentliche Kinder-Industrieanstalten* (1824). The principal works in which this union of industrial classes with common schools is urged, are by Friedrich, *Die Erziehung zur Arbeit* (1852), and Georgens, *Gegenwart der Volksschule* (1857). See also Douai, *Kindergarten und Volksschule* (1876); C. B. Stetson, *Technical Education* (Boston, 1876).

INDUSTRY is a quality or habit upon the value of which it is scarcely requisite to insist in an educational work; since its absolute necessity as a condition of success in every walk of life is almost undisputed. For though there have been eminent men, who might declare, as Montaigne did, that laziness was one of the ruling qualities of their minds, it will be found, probably, on examination, that their want of exertion was supplemented by great natural parts, which, in a measure, rendered that exertion unnecessary. It will, probably, be granted also that, with more continuous application, their success would have been far greater. The number of such men, moreover, is exceedingly small, and they were never the champions of the cause they adopted. On the other hand, we have the concurrent testimony of men eminent in every department of knowledge, and in all ages, as to the exceeding importance of industry both as an intellectual and a moral agent. The definition of the word, in fact, as it is commonly used, is its own best recommendation, *i. e.*, the disposition to keep one's self employed in some useful work. Industry is thus nearly synonymous with diligence (q. v.); but the latter is rather dependent upon the feelings, the former, upon the conscience. The great importance of industry being acknowledged, it only remains to consider the method by which an industrious habit may be fostered. Though industry is frequently a matter of temperament, or merely an indication of bodily health, there are many cases in which the want of it cannot be explained by reference to either of these causes. Usually, children are active enough; though, during their earliest years, their activity takes the form of play. Nature seems to have pointed this out as the most promising avenue through which the mentally indolent child may be approached, so as to direct its energies into the right channel. By associating with it, in its recreations, suggesting new ones which involve some pleasing mental exercise, and thus bridging over the gap which separates play from work, and making it narrower or less abrupt, the judicious teacher may rouse the dormant faculties and implant industrious habits, where, at first, this might have seemed impossible. This is the key to the kindergarten system. It must never be forgotten that an indolent habit of mind is sometimes the result of discouragement arising from a too early presentation of mental pursuits to faculties not yet sufficiently developed to undertake them. Frequently the child falls into an indolent habit from the fact that it cannot choose out of many things which one to do, or, doing a little only of each, accomplishes nothing of consequence—a condition equivalent to indolence. The method here should be a daily routine, in which the teacher should work with the pupil, giving thus the powerful stimulus of his example, to instill into the pupil's mind ideas of order, method, and constancy of exertion. In forming the industrious habit, the school room has immense advantages over the home circle as it usually exists, from the fact that no distracting cause can properly be allowed to enter; and because, too, all its exercises, lessons, and tasks imply the need of continuous application and exertion, without regard to the momentary inclinations of the pupil. The implanting of this single habit firmly in the pupil's mind is, doubtless, one of the most important results of both home training and school education.

INFANT SCHOOLS. See KINDERGARTEN.

INSPECTION, School. See SUPERVISION.

INSTITUTES, Teachers'. See TEACHERS' INSTITUTES.

INSTRUCTION (Lat. *instructio*) is the communication of knowledge. Education trains the powers of the individual, in order that he may attain to the perfection of his being; instruction supplies him with something that is objective or external. Instruction has specially to do with the intellectual development of the child, and is an instrument in the hands of the educator, which he can wield with the greatest precision and in the most skillful manner. He may attempt to act on the feelings and the volitions; but so obscure are the operations of the soul in these regions, that he may produce exactly the opposite effect to that which he intended. But when he communicates knowledge, he knows that, if the pupil is capable and attentive, he will receive exactly that which it is intended he should receive. Moreover, knowledge stands in close relation to the feelings and volitions; and, accordingly, the teacher employs it for the purpose of influencing and directing these. Thus, it comes to pass that instruction occupies the largest part in the work of education, and constitutes that portion which can be undertaken and provided for by a community, since it can be delegated by a parent to a regularly trained teacher with the best results. Instruction is putting something into the mind; education is strengthening and developing the powers of the mind. It is plain that a teacher should put nothing into the mind which does not train and develop its powers; but as it is possible to do so, and as this frequently takes place, instruction is to be divided into educative and non-educative; and one of the most important questions which a teacher can investigate, is the nature of educative instruction. There are three qualities which attach to all educative instruction: (1) Instruction, to be educative, must follow the natural laws of the intellectual development of man. Man's intellectual life begins in the exercise of the senses. He accumulates a large number of individual observations. In these observations, like gathers to like. A child looks at a tree; and the tree produces an impression on his mind. The next day, he sees another tree; and the resemblances in this tree strike his mind, and recall the former impression. The two impressions thus unite, and form a stronger impression than either separately. Other impressions of a similar nature unite, until the child forms a definite notion of a tree. The child is thus gathering into unities the various impressions which he is continually forming; and this process continues. He learns the individual first, and groups his observations. Thus instruction, to be educative, must always proceed from the individual to the general, from the concrete to the abstract. There is no reversal of this process in education; but the process is often reversed in instruction with baneful effect. To the teacher, the general truth contains the sum of all the particulars, and he thinks he gives to the child this general truth with all its contents, when he urges it upon him, makes him commit it to memory, and frequently recalls it to his mind; but the fact is, that the child learns the general truth without the contents. He has the shell without the kernel. The result is, either that the truth lies dormant until experience gives him the particulars, and he may then recall the truth, or that the child is lulled into the belief that he has learned something when he really knows nothing, and his mind is prevented from stepping forward in that direction, by the belief that he knows the truth already. Furthermore, this non-educative instruction loses a great opportunity. If the child is allowed time, and is supplied with a sufficient number of individual instances, he is sure to make the generalization himself. Nothing imprints the truth more permanently than the discovery of it for himself, and nothing brings into play all the powers of the soul more healthily than the discovery of a truth. The teacher must, therefore, always proceed from the concrete to the abstract; but, in employing this method, he must exercise very great patience. Generalization is a slow process, somewhat uncertain in time. The child seems to be just reaching the truth, but he turns away with a bound, and he may take some time more to master it completely. Or he may, one day, have a glimpse of it, and the next, it has vanished. But, however slow or uncertain the process may be, it is the only truly educative mode of giving instruction. The teacher, like Socrates, is a maieutic artist, and he must watch carefully over the birth of a truth, not forcing nature, but giving nature every help that she will willingly receive. (2) Educative instruction arrests the attention and awakens the interest of the pupil. The rule implied in this statement may be expressed in the words, that the teacher must attach the new matter to the old by a natural connection, that he must pass from the known to the unknown. The subject of attention is one that cannot be discussed here. We can note only how it is to be secured. The pupil must be on good terms with his teacher. Where there is antagonism, there can be no satisfactory attention. The pupil may, indeed, attend through fear; but fear is a weakening force; and the result is, to associate in his mind, with the subject comprehended, feelings of dislike and disgust, so that, at the end, there is no interest in the subject, but, on the contrary, a wish that he may never have to do with it again. Then, the teacher must carefully consider the state of the pupil's mind, when he commences. Probably, he has come from the play-ground. His mind is occupied with some occurrence that has taken place there, and his mind will remain occupied with it the whole hour, if the teacher does not employ means to displace it. Some little time should be given to the pupil to calm down; and then, when he is prepared to listen, the teacher should start with something that the pupil knows well and feels an interest in, and from that gradually work his way to the new matter which he has to communicate. The result of his teaching should be, that the child has a stronger interest in the subject than he had before. To rouse this interest, the teacher has to remember that every intellectual activity is closely connected with corresponding feelings and exertions, and the teacher succeeds when he makes his intellectual propositions awaken the appropriate feelings and exertions. (3) Educative instruction always keeps in view the principal aim and end of education. It always works for a purpose. The object is not to cram the pupil with a certain amount of knowledge, to give him an hour's dose of information, without regard to his whole being. It deliberately asks whether the information which is to be imparted, will fit into the harmonious development of the child's powers. It will, therefore, proportion the amount given to the healthy evolution of the child's nature. It will not look to the greatest success in the particular department, but to the greatest success compatible with the healthy action of all the child's powers.

It is not necessary, in an article like this, to go further into the questions to which the subject of instruction gives rise. They are treated in separate articles. We may, however, take a general view of them: (1) We should have to treat of the subjects of instruction. These may be divided into those that relate to nature, those that relate to man, and those that relate to God. The first gives us the natural sciences,—a knowledge of the earth in its present state, geology, botany, zoölogy, physics, including astronomy and chemistry. Then come the abstract subjects arising out of these: the science of numbers and of magnitude, arithmetic, algebra, and geometry. Next follows the knowledge that relates to man: physiology, psychology, and sociology; but the latter sciences cannot be taught scientifically to children. The main facts are made known concretely in literature, and therefore the pupil learns languages,— his own, modern languages, and ancient languages. Education insists that these should ultimately, and as soon as possible, pass from being mere studies of words to be a means of acquainting the pupil with the feelings, thoughts, and desires of great and good men, past and present. Closely connected with languages is the study of history; and allied to history and intermediate between the first and second classes of study, is geography,— a knowledge of the earth as it has influenced man and been used by him. The third class of subjects relate to religion; but this is closely allied to the second, and, indeed, falls properly under it; for it is the knowledge of man's relations to God. (2) We should have to inquire into the educative value of all these studies, but this inquiry belongs to the special articles. Here it has to be remarked, that none of the subjects must be entirely omitted. The mind of man must not be deliberately made one-sided. The multiplication of interest is one of the great objects of education. (3) We should have to inquire into the methods of education; and (4) into the organization, private and public, necessary to render instruction effective. All these subjects are discussed in the ordinary manuals on instruction. Educative instruction has been made the subject of special investigation by T. Ziller, in his *Grundlegung zur Lehre vom erziehenden Unterricht. Nach ihrer wissenschaftlichen und praktisch-reformatorischen Seite entwickelt* (Leipsic, 1865).—See also Rosenkranz, *Pedagogics as a System*, trans. by A. C. Brackett (St. Louis, 1872).

INTELLECTUAL EDUCATION. The term *intellect* (Latin, *intellectus*, from *inter*, between, and *legere*, to gather, or collect) is used to denote the faculty or faculties by which man *knows*, in distinction from those of *sensibility* and *will*. In the formation of the human character, the culture of the intellect is of subordinate importance to that of the other two mental functions, — the proper order in this regard being (1) will, (2) sensibility, (3) intellect; for the intellect is only an instrument, the use of which must depend upon the natural strength and educational training of the other elements of human character. There is, however, without doubt, a reflex action of sound intellectual culture, by means of which the propensities and tastes of an individual are ennobled, and his moral sense strengthened. In order to direct the education of the intellect, it is necessary to understand its operations and the mode of its growth from infancy to mature age; the processes by which its powers may be guided, stimulated, and improved, and the agencies by means of which this improvement, or culture, is to be effected. The human mind acts, as it were, by separate faculties; it appears to possess distinct powers. These faculties, or powers, are without doubt, intimately associated. They are but functions of a single agent; but they are functions distinct, both in their mode of operation and in the objects upon which they are exercised. To form an idea from a present object of sensation is obviously distinct from recalling that idea when the object is no longer present. This again differs essentially from the suggestion of one idea by the presence of another in some way associated with it. Again, to create from the simple impressions derived from natural objects an original picture, or series of pictures, such as those of Hogarth on canvas, or of Bunyan, in written composition, is certainly a very different process from the selection and combination of elementary propositions so as to derive from them an original principle, or truth. The mind is, nevertheless, a unit; and all its operations, of however diverse a character, may be conceived to depend, directly or indirectly, upon some rudimental process; but nothing would be gained practically by such a procedure; and, therefore, we may properly conform to the common usage in this regard, and consider the intellect as comprehending many distinct faculties, which, of course, cannot be cultivated and strengthened by the teacher without a sufficient knowledge of their respective spheres of action, their modes of operation, and the objects upon which they are specially exercised. These have been conveniently classified and designated as follows: (1) The *acquisitive faculties*, including consciousness and sense-perception; (2) The *representative faculties*, including conception, association, memory, and imagination; (3) The *elaborative faculties*, including, comparison, abstraction, generalization, judgment, and reason.—The *senses*, those avenues of communication with the external world, are first to be considered, since probably ideas, at first, spring from sensation, which appears to be the primitive stimulus of activity in the whole animal kingdom. (See Senses.) It is, however, in no other way connected with the mind than as the means of supplying the material upon which the first mental operations are performed; and when this material is afforded, the mind, as an entirely independent agent, may or may not act upon it, this act being controlled by what is called *attention* (q. v.), which is only a condition of activity assumed by the mind in regard to any of the objects of sensation or consciousness. When sensation and attention exist simultaneously, there must result what is called *perception*, sensation being simply the effect produced by external objects upon the bodily organs, and perception the act of the mind in becoming cognizant of it as proceeding from some cause extraneous to itself. The product of these two acts, constituting what is called *sense-perception*, would be only momentary, or would last only during the presence of the object perceived, but for the existence of a faculty by which the mind retains impressions thus made, recalls them, voluntarily or involuntarily, and thus is enabled to make them the subject of independent mental action. These impressions, and in an especial manner those made through the medium of sight, become in this way a part of the mind; they are imprinted upon its very texture, as it were, like pictures upon the photographic glass. Hence the name *ideas* (from the Greek word *ἰδεῖν*, to see). This faculty is called *conception* (q. v.). It requires the most careful cultivation in childhood and youth; since it alone enables the mind to store up the materials of knowledge and thought in its wonderful and mysterious repository. The intellect of childhood is chiefly employed in the exercise of it — in storing up ideas, and gathering materials out of which to produce its subsequent creations, whether these are the fantastic pictures of fancy, the more regular combinations of imagination, or the sequences of ratiocination. Whatever, therefore, hinders this process, shrivels the mind and stunts its growth. Its vitality dies out for want of exercise, and torpor takes the place of elasticity and vigorous life. This is, therefore, one of the first faculties to be addressed in education. Its activity is to be fostered by supplying it with abundant food — objects on which it may be exercised, and language designed to bring into clear mental view the conceptions already acquired. — The next mental process to be considered is *association*. In the first stages of the mind's growth, there exists but little power of combination, certainly none of logical combination; but there is an elementary principle of intellection by which ideas tend to become linked together according to certain relations; this is called *association* (q. v.). Perhaps, the most important of the elementary associations established in regard to the conceptions is that of words or names with the conceptions of objects which they are thus made to represent. This is, without doubt, one of the earliest, as well as one of the most rudimental, of the mind's combinations. The association itself, it must be borne in mind, is all that is arbitrary; since it is not words themselves that are associated with the conceptions of the objects, but conceptions of the spoken words, formed through the medium of hearing. What is meant by asserting that the association alone is arbitrary, is that the spoken word, as an actual sense-perception, is retained and recalled by conception, and is, therefore, no more arbitrary than any other idea; but having no intrinsic relation to the conception for which it is to stand, it is associated with it arbitrarily, that is, by repeatedly bringing the two conceptions together, in accordance with that law of mental action by which ideas repeatedly brought into connection suggest each other. — Without the association of words with ideas, the mind could advance but a very few steps in its development; because, (1) it would be unable to receive any stimulus by communicating with any other minds; (2) it would be powerless to control the order in which the conceptions would present themselves to the mind, or to divest them of the vagueness of revery or dreaming; and (3) no process of thought or reasoning could be carried on without the assistance of language. This need of words is illustrated by the efforts of children to talk, and call things by names, long before the power of articulation exists, thus showing that, although they are unable to employ words for the expression of ideas, the mind is constantly making use of them in carrying on its rudimental operations. — It is an important law that conceptions are more strongly associated when their corresponding perceptions have been associated. Thus, suppose it is desired to teach a child the meaning of the word *ship*; in other words, to associate in his mind the spoken word *ship* with the conception of the ship, so that the one will always suggest the other. If he has never seen a ship, nothing but the actual perception will suffice, and he must be taken where one may be actually seen; but if he has seen the object without learning its name, the conception may be recalled to his mind either by questioning him or by showing him a picture of it. Without doing this, the word *ship* may be repeated to him, and he may pronounce it any number of times, without learning any thing, since it would be presenting to his mind a sign without showing what it signifies. In elementary instruction, this error is quite often committed.

It is important to consider upon what fundamental or primary notion the mind proceeds in establishing the arbitrary association between things and their names; that is, between conceptions which intrinsically have no relation to each other. A slight observation will ascertain that the mind very early requires the notion of names as representatives of things, and thus comprehends the relation existing between a *sign* and the *thing signified*; not that this notion is made an object of actual consciousness or reflection, but that it is intuitively recognized by the mind, and is practically employed by the child in making known its wants or expressing its feelings. The question, "What is it?" so often heard from the lips of a young child on seeing a new object, appears generally to have reference only to this notion. The child perceives the need of affixing a name to the object in order that it may become a definite conception, as well as be prepared for expression; and when a name is given, however arbitrary or unintelligible, the inquiry proceeds no further, the child appearing entirely satisfied. It is only when the mind has made more progress in development and has acquired a knowledge of other relations, that this question can possibly have any other import. Very much of the early development of a child's mind thus consists in acquiring a knowledge of words, but, let it be carefully observed, of words only as *representatives of actual conceptions*. In this way, the knowledge of things, and the knowledge of words, increase *pari passu*, and the mind is prepared for operations of a more advanced character: since it is only by symbolizing individual conceptions, that *generalization* can take place, that is, that individuals can be conceived with reference exclusively to certain qualities which they possess in common, and thus be arranged in classes. This office of language has been explained in the following manner by a very acute writer (H. L. Mansel): "*Intuitive generalization* consists in directing the attention, voluntarily or involuntarily, to the common features of several objects presented to us, neglecting or not perceiving those qualities which are peculiar to each. It is not a distinct cognition of the class as a class, nor of the individuals as individuals; but a confused perception of both together. To form a complete cognition of the individual, I must, by the aid of imagination, supply those distinctive features which I am unable clearly to perceive. To form a complete cognition of the class, I must separate the common attributes from their connection with a definite time and place. But how are attributes. apart from their juxtaposition in space, to be so connected together, as to constitute a single object? The head and trunk and limbs of an individual man are connected together by continuity in space, and by that continuity constitute a whole of intuition, whether distinctly recognized in that relation or not. How are the attributes of mankind in general to be separated from their position in space, and yet so united together as to constitute a whole of thought? To effect this we must call in the aid of language. The word is to thought what space is to perception. It constitutes the connecting link between various attributes—the frame, as it were, in which they are set — and thus furnishes the means by which the features characteristic of a class may be viewed apart from the individuals in which they are intuitively perceived, and combined into a complex notion or concept." In regard to the same point, Whately remarks, in *Elements of Logic*: "The majority of men would probably say, if asked, that the use of language is peculiar to man; and that its office is to express to one another our thoughts and feelings. But neither of these is strictly true. Brutes do possess, in some degree, the power of being taught to understand what is said to them, and some of them even to utter sounds expressive of what is passing within them. But they all seem to be incapable of another very important use of language which does characterize man; namely, the employment of *common terms* (*general terms*) formed by abstraction, as *instruments of thought*; by which alone a train of reasoning may be carried on. And accordingly a deaf-mute, before he has been taught a language—either the finger-language or reading—cannot carry on a train of reasoning, any more than a brute. He differs indeed from a brute, in possessing the mental capability of employing language; but he can no more make use of that capability till he is in possession of some system of arbitrary general signs, than a person born blind from cataract can make use of his capacity of seeing, till the cataract is removed."

Next to the association of things with words as their representatives, is that founded upon a perception of *resemblance* in the objects from which conceptions are derived. This, it will be perceived from what has already been adduced, takes place prior to generalization, to which it directly leads. There is, probably, no relation so obvious to a child as that of resemblance or analogy, and none that affords so much employment to its mind, or that affects it with more pleasurable emotions. This is particularly the case with the relation of analogy when found to exist between objects quite dissimilar. The facility and readiness with which very young children discern resemblances, whether they are founded upon form, color, or structure, indicate a natural aptitude of the mind to perceive the varieties of these qualities in different objects,—of these qualities especially, because they are addressed to the sight, which of all the senses gives rise to the most vivid conceptions. The varieties of color (tints), form, etc., generally have no designations in the child's mind—no symbols in language; and, therefore, cannot be made distinct objects of conception or of consciousness; and, in the earliest stages of mental development, this is not required to enable the mind to carry on its rudimental processes. Very young children can learn to classify objects with respect to their resemblances in form, color, etc.; and to require them to do this, is one of the best exercises that can be employed to aid the development of their minds. The readiness with which children apply the same name to objects having only a general resemblance to each other in form, color, or structure, is another proof of this characteristic of the human mind. "Children," says Aristotle, "at first call every man *father*, and every woman *mother*, but afterwards they distinguish one person from another." The perception of resemblance is, thus, prior to that of difference, and, apparently, for a very good reason; since, if the reverse were the case, the mind, instead of requiring immediately words as the representatives of classes, would need a word for every object of perception, and thus could make no advancement in developing the higher faculties. This was the doctrine of Pestalozzi, and a basic principle of his system. There is no doubt that very great diversities in objects excite the attention more readily than corresponding resemblances, just as rapid transitions from one color to another, from intense darkness to a brilliant illumination, etc., produce activity in the perceptive faculties; and hence, the employment of such processes in the education of those mentally deficient; but where any two objects are placed before a child, of which the points of resemblance and of difference are equally obvious to the developed and mature mind, the child will intuitively notice the former before he will the latter. The constitution of the mind seems to necessitate this. Objects which are very unlike may, indeed, have some points of resemblance which escape the notice of a child, and which, therefore, the teacher will need to point out so as to assist in their discovery, and, in this way, to cultivate the habit of observation. The whole structure of the intellect as a thinking and reasoning apparatus seems to be based on the ready recognition of likeness and analogy in the various objects presented to the senses. Isaac Taylor remarks, in *Home Education*: "The sense of resemblance runs before the power of discriminating or designating differences; hence, it happens that by the infant and the savage the names of individuals are extended to species, and the names of species to genera." "Thus," as Mansel remarks, "by the aid of language, our first abstractions are, in fact, given to us already made; as we learn to give the same name to various individuals presented to us under slight, and at first unnoticed circumstances of distinction. The name is thus applied to different objects long before we learn to analyze the growing powers of speech and thought, to ask what we mean by each several instance of its application, and to correct and fix the significance of words at first used vaguely and obscurely." The association of the conceptions as dependent upon an observation of resemblance, has been called *intuitive generalization;* since it does not consciously follow any process of abstraction, because, from the failure of the undeveloped mind to notice distinctions and differences, no such process is needed for the purpose. For example, a child sees a book for the first time, and learns its name, *book;* now, on seeing another book, however different from the first in size, color, etc., he invariably applies to it the term *book*, by the perception of analogy leading on to intuitive generalization. Common names are, therefore, first learned, and particular or proper names only given to such objects as are constantly presented to the mind; since, by being thus more intimately known, their distinctive peculiarities are more clearly discerned, this discernment leading to an *individualization*, as the next step in the growth or development of the mind. The operation of the sense of analogy is seen in the use of figurative, or more definitely, tropical language; and its rudimental character is illustrated by the fact that children and savages are particularly prone to the use of this language. Indeed, as before remarked, it is one of the most intense mental pleasures of the child to trace analogies in objects of considerable diversity in general appearance, and to apply such metaphorical terms as will forcibly express them. This again adds very greatly to a child's power of expression, since, without the perception of these analogies in objects, every variation would require some specific term, metaphorical names ceasing to have any meaning whatever. This characteristic of a child's mind gives to the intelligent teacher considerable resources for illustration, particularly in the use of words and their application to the objects which they represent. Thus, the term *cape* would be much better understood if its exact literal import were explained, and the analogy exhibited between the *head* and a *cape*, or *headland*. It is unfortunate that so few compound or derivative words in English are formed from the simple words of the language itself, and that recourse has been had to so great an extent to the Latin and Greek languages for a supply of such roots; since, in consequence of this, most of the words of the language are necessarily taught as arbitrary terms, which, otherwise, would be the means of stimulating mental activity in the learner. A striking contrast has very often been made, in this respect, between the English and German languages, such terms as *Regenschirm* (umbrella), *Sonnenschirm* (parasol), *Handschuh* (glove), *Fingerhut* (thimble), *einsaugen* (absorb), *durchsichtig* (transparent), etc., illustrating very clearly the fact referred to. This peculiarity of a language, in drawing almost exclusively from its own primitive words the materials for the construction of complex epithets, is also very prominent in the Greek language, and constitutes one of its excellencies. Where it exists, it must afford great facility in education, and must form the basis for processes which are impracticable where a language, such as the English, is to be employed, which derives nearly all of its abstract and scientific terms from languages not merely foreign but entirely out of use. The growth of mind in its relation to language has been here dwelt upon at some length because of its importance as a source of practical knowledge to every teacher who makes the study of mind the basis of his operations. Arbitrary rules may be laid down, and applied; but the scientific teacher who investigates the foundation of these rules in the principles of intellectual science will best know how to adopt his methods to the diversified exigencies of his work. Association as an elementary function of mind, is dependent upon a variety of circumstances other than those enumerated; as time, place, cause and effect, and design. These are, however, of secondary importance for the study of the educator.—The peculiar functions of the representative faculties, *memory* and *imagination* should receive a careful study, since they underlie many of the most important processes which he is called upon to direct. (See Imagination, and Memory.) The elaborative faculties, comparison, abstraction, and generalization, have already been referred to in relation to the rudimental stage of their operation; in the higher grades of instruction, they find constant exercise in the studies of mathematics and natural science, which form a part of the curriculum of every high school, college, and university. Judgment and reason pass through a gradation of development from the most elementary to the highest stages of education.—Such is the field which a discussion of the principles of intellectual education embraces. In the practical application of these principles, the teacher is to be guided not only by a knowledge of the general functions of mind and their development, but by all the peculiarities of individual endowment which he may be able to discern. (See Character, Discernment of.) He is to permit the mind to expand by its own intrinsic activities, only interposing restraining or stimulating agencies when and where he finds a tendency to abnormal or morbid growth. There are, however, special methods of operation in intellectual education, partaking more of a positive character, by means of which the teacher is directly to impart knowledge — to communicate information; and, thus, is opened up a consideration not only of the mind to be cultivated, but of the branches of knowledge to be taught, in relation to the several faculties which they tend to cultivate. (See Instruction.) In this connection, and by the use of the same guiding principles, the proper order of presenting these studies must be considered and ascertained, this order being correlated with the natural order in which the intellectual faculties are developed. (See Course of Instruction.) The final result of this department of education should be, to enable the individual, in all the circumstances of life, to exercise with efficiency and address the various intellectual faculties with which he has been endowed. (See Culture.)

INTEREST. To awaken an interest on the part of the pupils in the subjects of instruction should always be a prominent object of the teacher's efforts, since it is an indispensable condition of all true success. Antecedently, the young pupil feels no interest in the school studies; he neither appreciates their importance nor has any desire to acquire a knowledge of the subjects of which they treat. But the skillful teacher knows how to stimulate curiosity, and to impress upon the mind of the pupil the idea that he is acquiring knowledge, and thus to awaken an interest in the processes of instruction. When these processes are appropriate and natural, the pupil's interest is easily sustained; and it will be generally found that a flagging interest is due either to previous defective training or to the endeavor to teach subjects for which the pupil's mind is not prepared. It is a psychological axiom that the mind has no less appetite for knowledge of the right kind, than exists physically for proper food to nourish the body. It is, therefore, the office of educational science to determine the kind of mental food proper for every age, and how it should be prepared so as to stimulate, while it satisfies, the mental appetite. There should also be individual adaptation, the teacher giving whatever attention may be necessary to the special inclinations, tastes, and capacities of his pupils. (See ATTENTION.)

INTERMEDIATE SCHOOLS are schools of a grade between primary schools and grammar schools, or between elementary schools and high schools. Such schools generally constitute an important part of the graded school system. Schools of a grade between elementary schools (in German, *Elementarschule*), and colleges and universities, are often called *middle schools* (German, *Mittelschule*).

INTERROGATION, or the **Interrogative Method,** is an indispensable means of conducting most processes of instruction, particularly those of an elementary grade. Its office is either (1) tentative, or (2) illustrative. As a tentative process, the teacher uses it to determine the quantity and the quality of the knowledge which the pupil has attained. Thus, in hearing recitations, the teacher, by means of questions, ascertains how much of the lesson previously assigned, the pupil has learned, and with what accuracy it has been learned; and on the kind of questions asked, as well as on the manner of asking them, depends the degree of skill and effectiveness of this important part of the teacher's work. The same is true, also, of the conducting of examinations by school inspectors or superintendents. The process of questioning is also tentative when used as preliminary to a course of instruction, in order to determine the amount of information, or the kind of ideas, already acquired by the pupil, either directly relating to the subject or remotely connected with it, and constituting the elementary conceptions upon which it is to be based. Instruction on every subject needs such preliminary questioning.—Interrogation is illustrative when it is used as a direct means of instruction, in order to induce the pupil to combine his ideas in such a way that he may be led to a clear conception of the truth. This was the process used by Socrates in giving instruction; and hence, it is often called the Socratic method. Great skill can be exercised by the teacher in the use of interrogation for this purpose; indeed, the art of questioning (*catechetics*) becomes a special department of the work of teaching, and has been so treated. Rules can scarcely be given for its attainment; but it may briefly be said that it depends upon (1) a thorough training of the analytic faculty of the teacher, (2) such a minute and accurate knowledge of the subject to be taught as will enable him to resolve it into its elementary principles, (3) a full appreciation of the pupil's condition of mind, both as to capacity and degree of attainment, and (4) sufficient practice in interrogation to produce facility in framing questions of every kind and form. Where these conditions exist, the questions asked will be an effective means of making every subject clear to the learner's mind. (See CATECHETICAL METHOD.)

INTUITIVE METHOD. See OBJECT TEACHING, and PESTALOZZI.

IOWA, originally a part of the vast Louisiana purchase of 1803, was included in the territory of Iowa, organized in 1838, which extended north from the state of Missouri to the British line, and was bounded on the east and west, respectively, by the Mississippi and Missouri rivers. It was admitted into the Union, with its present limits, in 1846. Its area is 55,045 square miles; and its population, in 1870, was 1,194,020; but, in 1873, it was reported as 1,251,333.

Educational History.—In 1833, the date of the first permanent settlement of Dubuque, a school-house was built in that town, which, it is claimed, was the first built in the state. It was erected by funds contributed by the enterprising lead-miners. During the next six years, other schools were opened in various parts of the state. In 1839, the territorial legislature passed a law for the establishment of public schools, providing that "there shall be established a common school, or schools, in each of the counties of the territory, which shall be open and free for every class of white citizens between the ages of 5 and 21 years." It also provided for the formation of school districts, each to be governed by a board of three trustees, whose duties were to examine and employ teachers, superintend the schools, and collect and disburse the school moneys. In 1840, the legislative assembly enacted a much more comprehensive law for the establishment of a common-school system, making ample provision for free public schools. In the U.S. census of 1840, very few schools, either private or public, were reported: an academy, in Scott county, with 25 pupils, and 63 common schools, with 1,500 pupils. In Jan., 1841, the office of superintendent of public instruction was created; and Dr. William Reynolds, a teacher at Iowa City, was appointed to the place. The office was, however, abolished Febr. 17., 1842; but, by the first constitution of Iowa, the general assembly was required to provide for the election of a superintendent of public instruction, who should hold office for three years. Since that time, the office has been filled successively by the following *state superintendents:*—James Harlan, from 1847—8; Thomas H. Benton, Jr., from 1848—54; James D. Eads, from 1854—7; Joseph C. Stone, for one month; Maturin L. Fisher, from June 1857 to Dec. 1858, when the state board of education abolished the office, assigning its duties to the secretary of the board. Thomas H. Benton, Jr., was elected secretary, and served till 1863, when he resigned to enter the U. S. military service. During a portion of that year, the duties of the office were performed by H. A. Wiltse, who was succeeded, in 1863, by Oran Faville. The office of superintendent of public instruction was revived March 23., 1864, and Oran Faville was elected to the position, in which he remained till March 1., 1867. His successors were D. Franklin Wells, from March, 1867, till his decease, in Nov. 1868; Abraham S. Kissell, from Jan. 1869 to Jan. 1., 1872; and Alonzo Abernethy, from Jan. 1., 1872 to the present time (1876). When Iowa was admitted into the Union, it contained about 400 school districts. The number, however, rapidly increased, amounting, in 1849, to 1,000, and in 1850, to 1,200. In 1857, the state board of education assumed control of the educational interests of the state. The number of school districts, at that time, had increased to 3,265; but, difficulties having arisen in the practical working of the system, an act was passed in 1858, by which the school districts were made co-extensive with the civil townships, and "each incorporated city or town, including the territory annexed thereto for school purposes, and which contains not less than 1000 inhabitants," was created a separate school district. The number of districts was thus reduced to less than 900. By this arrangement, although it met with considerable oppositions, the system was rendered less complex, and there was a saving of $31,000 in the expenditures. In 1858, a law was enacted, providing that any city or incorporated town, including the territory annexed thereto for school purposes, might constitute a school district, by vote of a majority of the electors residing therein. In 1860, this was extended to unincorporated towns and villages of not less than 300 inhabitants; and, in 1866, to any city or sub-district containing not less than 200. Notwithstanding the dissatisfaction caused by the sub-district system, which led to special legislation in 1867 and 1872, the system was not abandoned; and, according to the report of State Superintendent Abernethy, for 1875, from April, 1872, to Sept. 15., 1873, 119 district townships, containing 901 sub-districts, were reported as having completed independent organizations. From Sept., 1873, to Sept., 1875, about 160 additional district townships adopted the independent district system, thus increasing the number of independent districts by more than 1,000. The state board of education, provided for by the constitution adopted Sept., 1857, consisted of the governor, lieutenant governor, and one member elected from each judicial district in the state. The term of office was four years, and the lieutenant governor was the president of the board. To this body were committed the entire interests of the common school system. The first board was elected Oct 12., 1858. In 1864, the General Assembly abolished the board, and reorganized the school system. Subsequent legislation also modified it in some particulars.

School System.—The system, at present, is administered by the following officers: (1) a *state superintendent*, elected for two years; (2) *county superintendents*, also elected for two years; (3) *township boards of directors*, consisting of three or more sub-directors for each township, who have the management of the township school fund; and (4) a *sub-director* for each sub-district, for the local management of the school. By the school law of 1874, the county superintendent is required to visit each school in the county at least once in each term, spending one half day at each visit. In order to systematize and preserve the results of these visitations, the state superintendent furnishes each county superintendent with a blank containing the subjects most important to be inquired into; and these blanks when filled afford information to be incorporated in the state superintendent's annual report. These subjects are, (1) the condition of the school-houses, furniture, and out-buildings; (2) the discipline and classification of the school, and the mode of conducting recitations; and (3) the form and mode of keeping the daily register. The county superintendent is empowered to examine applicants for *teachers' certificates* and to issue the same to those found qualified to teach orthography, reading, writing, arithmetic, geography, and English grammar, upon satisfactory evidence of their good moral character. The number of applicants thus examined in 1875, was 20,195; and the number of certificates awarded was 16,452; of which 4,797 were of the 1st grade; 7,959, of the second; 3,333, of the 3rd; and 363, professional certificates.

The *school revenue* is derived from several sources: (I) A teachers' fund; (II) A school-house found; (III) A contingent fund.—I. The *teachers' fund* is derived from, (1) the interest on the permanent school fund of the state, accruing from the sale of school lands appropriated by Congress for this purpose; (2) a county school tax of not less than one mill nor more than three mills on the dollar, levied by the board of supervisors on the taxable property of the county; (3) such additional tax on the property of the district, determined by the boards of directors, as may be needed to support the schools for six months or longer, if so determined. II. The *school-house fund* is derived from a tax for the purpose of purchasing sites and erecting school-houses. III. The *contingent fund* is obtained by a tax, determined by the board of directors, sufficient to provide for rent, fuel, repairs, and all other current expenses required to keep the school in operation. The permanent school fund is derived from the following sources: (1) Five per cent upon the net proceeds of the public lands of the state; (2) The proceeds of the sales of 500,000 acres of land granted by act of Congress, Sept. 4., 1841; (3) The proceeds of all sales of intestate estates, which escheat to the state; (4) The proceeds of the sales of the sixteenth section in each township, or lands selected in lieu thereof. The aggregate amount of the permanent fund, in 1875, was $3,098,497. The school moneys are distributed among the districts in proportion to the number of children of school age—between 5 and 21 years—residing therein.

Educational Condition.— According to the report of the state superintendent for 1874—5, there were in the state 1,134 district townships, comprising 7,062 sub-districts; and 2,536 independent districts, thus making, in all, 3,670 school districts in the state. The whole number of common schools was 9,610, of which only 407 were graded schools. The average time of keeping school during the year was 6.8 months. Other items of *statistics* are given below :

No. of children of school age,	males,	274,849	
	females,	258,722	
	Total,		533,571
Number of children enrolled,			384,012
Average daily attendance,			225,415
Number of teachers,	males,	6,500	
	females,	11,645	
	Total,		18,145
Average monthly compensation,	males,		$36.68
	females,		$28.34
Receipts,			$5,035,497.65
Expenditures, for tuition,		$2,598,439.81	
" other purposes,		2,007,309.58	
	Total,		$4,605,749.39

Normal Instruction. —The establishment of schools for the instruction of teachers has not met, as yet, with the success attained in most other states. In 1848, a law was passed by which three normal schools were to be established in different parts of the state, which was divided into three districts for that purpose. For each district, a board of seven trustees was appointed, with power to provide suitable buildings, employ teachers, and exercise a general supervision over the schools. The sum of $500 was appropriated annually, to each school for the payment of teachers, the purchase of apparatus, etc., provided the people in each district should subscribe an equal sum for the erection of the buildings. The expected pecuniary aid, however, not being furnished, the schools which had been commenced were, in a short time, discontinued. In 1858, a normal department was established in the state university, and continued until 1872, when it was consolidated, in the main, with the academic department. Since then, a *chair of didactics* has been maintained in the university for the purpose of affording special instruction to those who may design to become teachers. There is also a normal department in Whittier College, Salem.

Normal institutes constitute the chief instrumentality for the professional improvement of teachers in this state. In 1874, the General Assembly enacted a law providing for the instruction of teachers by the annual holding of an institute in each county. The provision for the regular instruction of teachers having thus taken definite shape, and the necessity of uniformity in that instruction having become apparent, a course of study with a daily order of exercises, was prepared by the state superintendent, and was adopted at once. The general interest aroused by these meetings is illustrated by the following statement. In the year 1874, institutes were held in 89 counties; 35 continued in session 4 weeks; 26, 3 weeks; 20, 2 weeks; and 8, one week. Although attention on the part of teachers was voluntary, the number present amounted to 7,000. In 1875, it was still larger. The funds requisite to defray the expenses of these institutes are, in the main, contributed by the teachers themselves, being derived, (1) from the fee of one dollar paid by each person on receiving a teacher's certificate, (2) from the registration fee of one dollar at the institute, and (3) from the state appropriation of $50 for each institute. The sum obtained from these sources has, in some cases, been augmented by limited county appropriations.

Secondary Instruction.—In 1858, a law was passed, providing that the board of presidents of school districts in any county might determine whether a county high school should be established, and required them, if they determined to establish such school, to elect nine trustees who, together with the county superintendent, should constitute a board of high-school trustees, with power to lease or erect a building, and take entire charge of it; also to draw from the county treasury $3000 a year for six years, and $1000 annually thereafter, for the maintenance of such school. This provision, however, though earnestly advocated by some, was not taken advantage of, the majority considering it premature in respect to both the wants of the state and its financial ability. Only one school, that at Albion, was established under this law. This was continued about two years, when the funds expected from the state treasury not being supplied, it was discontinued, and the building was sold. Two attempts have since been made to re-enact this law in its essential features, but without success. In 1874, the people of Guthrie county decided to establish a high school, and this, according to the present state superintendent (1876), will soon be in operation.

In the state superintendent's report for 1875, there are included returns from 112 private academies, seminaries, high schools, business colleges, select schools, etc., which show an enrollment of 10,757 pupils, taught by 314 instructors. In the preparatory schools of the various colleges of the state, there are about 3,000 students, pursuing the usual branches assigned for secondary institutions.

Superior Instruction.—The Iowa State University (q. v.), at Iowa City, is the principal institution for superior instruction, endowed or aided by the state. Other institutions of this grade and character are included in the following table:

NAME	Location	When founded	Religious denomination
Burlington University...	Burlington	1852	Baptist
Cornell College...........	Mt. Vernon	1857	M. Epis.
Central Univ. of Iowa....	Pella	1854	Baptist
German College..........	Mt.Pleasant	1873	M. Epis.
Humboldt College.........	Humboldt	1869	Non-sect.
Iowa College...............	Grinnell	1848	Congreg.
Iowa Wesleyan University	Mt.Pleasant	1855	M. Epis.
Norwegian Lutheran Coll.	Decorah	1861	Lutheran
Oskaloosa College........	Oskaloosa	1856	*Christian*
Penn College.............	Oskaloosa	1873	Friends
Simpson Centenary Coll..	Indianola	1867	M. Epis.
Tabor College............	Tabor	1866	Congreg.
Upper Iowa University...	Fayette	1855	M. Epis.
University of Des Moines	Des Moines	1860	Baptist
Whittier College.........	Salem	1868	Friends
Western College..........	West. Coll.	1856	U. Breth.

Technical and Professional Instruction. — The State Agricultural College, at Ames, is endowed with the proceeds of the congressional land grant. Two experiments have been made in this institution, and are considered successful: the union of manual labor with intellectual development, and the co-education of the sexes. The course of instruction is for four years, and comprises civil, mechanical, and mining engineering, agriculture, horticulture, stock raising, architecture, military tactics, and general science and literature. The institutions of this class, for *theological instruction*, are the Theological Department of Iowa Wesleyan University, the German Presbyterian Theological School of the North-west, and the Swedish Lutheran Mission Institute. The *law schools* of the state consist of the law departments, respectively, of the state university, the Iowa Wesleyan University, and Simpson Centenary College. The chief *medical schools* are the medical department of the state university, and the College of Physicians and Surgeons, at Keokuk.

Special Instruction. — The chief institutions for special instruction are the Iowa Institution for the Education of the Deaf and Dumb, at Council Bluffs, and the Iowa State College for the Blind, at Vinton. Besides these, there are two state reform schools, one at Eldora and the other at Salem. At Davenport and at Cedar Falls, there is a state soldiers' orphan home.

Educational Journals. — The first publication in Iowa devoted to the interests of schools was a monthly, commenced at Dubuque, in January, 1853, under the title of the *District School Journal of Education for the State of Iowa.* This name was afterwards changed to *The Iowa Journal of Education.* It was suspended in 1856. In January, 1857, a monthly entitled *The Voice of Iowa* was commenced at Cedar Rapids, and was made the organ of the state teachers' association. It was, however, soon suspended. The *Literary Advertiser and Public School Advocate* was published from May, 1859, to October, 1860. In July of the latter year, The *Iowa School Journal*, a monthly of 16 pages, was started at Des Moines, and has been continued up to the present time (1876). An important influence is attributed to it in connection with the schools and educational system of the state. The *Iowa Instructor* was commenced in 1859; afterwards united with the Journal, and, in 1872, consolidated with *The Manual*, a monthly, commenced August 1., 1871. In January, 1874, *The Common School* was started at Davenport, but in 1875, it was united with the *Iowa School Journal.*

IOWA COLLEGE, at Grinnell, Iowa, was established at Davenport, in 1847, and was removed to Grinnell in 1860. It was founded by Congregationalists and Presbyterians (who withdrew in 1852), but is without any sectarian or ecclesiastical control. Its productive funds amount to about $90,000. It has libraries containing about 6,000 volumes, a museum of natural history, chemical, philosophical, and astronomical apparatus, etc. The cost of tuition ranges from $15 to $22 per year, with music, drawing, and painting as extras. Aid is furnished to needy students. The studies are arranged in the following departments: (1) Normal and English department, furnishing all "English studies," or preparation for teaching; (2) Academy course, of two years, preparatory to the College and *Ladies'* courses; (3) *Ladies' course*, of four years, chiefly consisting of college studies, like that of the best Eastern seminaries; (4) College course, of four, years, for both sexes. This is either classical or scientific, each including modern languages, and the latter, some post-graduate studies.—In 1875–6, there were 17 instructors and 4 lecturers (in all the departments), and 337 students: post-graduate 4; college course, 45; ladies' course, 40; academy course, 68; normal and English department, 174. Seventeen states and forty counties of Iowa were represented by its students in 1875, and there is an increasing attendance from the eastern and middle states. The Rev. George F. Magoun, D.D., the present incumbent, appointed in 1862, has been the only president.

IOWA, State University of, at Iowa City, was chartered in 1857, and organized in 1860. It is non-sectarian. It has productive funds to the amount of $220,000; and the value of its buildings, grounds, and apparatus is $250,000. Biennial appropriations are made by the legislature. It has an astronomical observatory, laboratory, and cabinets. The college library contains between 6,000 and 7,000 volumes; the law library, 2,500 volumes. The academical department, besides preparatory classes, has four regular courses; namely, classical, leading to the degree of Bachelor of Arts; philosophical and scientific, leading to the degree of Bachelor of Philosophy; and civil engineering, leading to the degree of Civil Engineer. Both sexes are admitted, and tuition is free. The law department was established, as the Iowa Law School, at Des Moines, in 1865, and was united with the university in 1868. The medical department was established in 1868. In 1874—5, the academic department had 21 instructors and 423 students; the law department had 4 instructors and 106 students; and the medical department, 13 instructors and 94 students. The Rev. George Thatcher, D.D., is (1876) the president.

IOWA WESLEYAN UNIVERSITY, at Mt. Pleasant, Iowa, was chartered in 1855, growing out of the Mt. Pleasant Collegiate Institute, established some years before. It is open to both sexes, and is under the control of the Methodist Episcopal Church. It has an endowment of $63,000. The libraries contain about 3,000 volumes. The university comprises 5 departments; namely, of liberal arts, with classical and scientific courses, of four years each, and a preparatory course of two years; of theology; of law; of pharmacy and anatomy; and of technology. In 1874—5, there were 15 regular instructors and 217 students in all the departments. A normal department has lately been organized. German College (q. v.), though distinct from the university in government, is intimately connected with it in instruction. The presidents of the university have been as follows: Rev. L. W. Berry, D.D.; Henry Jas. Harlan; Rev. Charles Elliott, D. D.; Rev. G. B. Jocelyn; Rev. Charles Holmes, D.D.; Rev. John Wheeler; Rev. Jno. Spaulding, Ph. D., the present incumbent (1876).

IRELAND, an island which forms an important part of the United Kingdom of Great Britain and Ireland, having an area of 32,531 sq. m., and a population, in 1871, of 5,402,759.

Educational History.—Annals that have considerable claim to authenticity ascribe to the people of Ireland a remarkable progress in education at a very early period. Thus, it is said, that Ollav Fola, who reigned about 900 B. C., founded in Tara schools of philosophy, astronomy, history, poetry, and medicine, and that these institutions were encouraged by his successors, during many centuries. In the 5th century, A.D., after its conversion to Christianity, Ireland was greatly celebrated not only for its religious zeal (hence called *insula sanctorum*, isle of saints) but for its institutions of learning. After the conflicts with the Saxons and Danes, the victorious king Brian Boru, among other efforts to improve the condition of his people, founded schools and promoted education. After the conquest of Ireland by the English, the first recognition on the part of parliament of the expediency of providing the means of education for the Irish people, was the act of 28 Henry VIII., to establish parochial schools. In 1570, an act was passed instituting a free school in every diocese. In 1608, James I. commenced the establishment of Royal Free Schools. Various statutes were passed on this subject in the reigns of Charles II., William III., and the first three Georges; but the main object seems to have been to proselytize the people to the Protestant faith. The Charter Schools, partly supported by parliamentary grants, had the same object. The bad effects of a policy so obnoxious to the Catholics, induced the parliamentary commission, in 1812, to state, in their report, that no scheme of education should be undertaken in Ireland which attempted "to influence or disturb the peculiar religious tenets of any sect or denomination of Christians." Parliament, for a time, endeavored to apply the principle by distributing its grants to the Kildare Society; but the plan failed, as the society enforced the reading of the Scriptures in all its schools. The letter of Mr. Stanley, chief secretary of Ireland (afterwards Lord Derby), to the Lord Lieutenant, written in 1831, forms the charter of the Irish National System. The new system was based on the plan of "a combined literary and separate religious education," and was committed to a board of 7 members of different religious opinions. Public aid was granted on condition that the repairs of the school, the salary of the master, and half the cost of school requisites should be locally provided. The extent to which the economical condition of Ireland interfered with the financial proposals of the board, may be estimated from the fact that, even in 1874, while the board paid in aid of schools nearly £433,000, the local aid amounted to less than £80,000. The promise of a national and non-sectarian system was not fulfilled in the action of the board, as it permitted religious instruction to be intermingled with the secular, and issued text-books of a distinctively religious character. The policy, as first announced, was accepted by the Catholics, but strenuously opposed by the clergy and laity of the Established Church, and by the Presbyterians of Ulster. At the close of 1833, the number of National Schools in operation was 789, having 107,042 pupils enrolled; at the close of 1839, the former had increased to 1,581, and the latter, to 192,971. In the latter year, explanations were made by the board which satisfied the Presbyterians, who had made various objections to the system, in regard to the arrangements for religious instruction, and to the exclusion of the Bible during school hours. The board declared these points of objection to be conceded, but without any change of its rules. This new rendering of the rules was followed by an extension of the system. In 1841, there were 2,237 schools, and 281,849 pupils. Shortly after this, the Catholic hierarchy manifested a strong desire to acquire the control of such of the National Schools as contained any children of their own persuasion; and the Synod of Thurles, which met in 1850, while giving no definite judgment on the National System, declared that "the separate education of the Catholic youth is, by all means, to be preferred to it." The more aggressive spirit manifested by the Catholics against the National System during the past twenty-five years, has led the board, from time to time, to adopt conciliatory measures; such as the repeated changes in the conscience clause, with the view of preventing the alleged proselytizing tendencies of Protestant schools; the special regulations in favor of convent schools; the increased proportion accorded to Catholic representation in the board, which has been increased from two to seven, in 1831, to five in fourteen, in 1851, and to ten in twenty, in 1861; and the endowment of schools, under Catholic management, in the neighborhood of, and as rivals to, the Model Schools, which are the special objects of denominational hostility. These proceedings were strongly opposed, especially by the Presbyterians, who are the warmest supporters of the National System; and it must be acknowledged that they have failed in their object. No Roman Catholic dignitary has sat in the board since 1863, and the most recent expression of Catholic feeling on the subject has been the formation, in Dublin, of a Catholic Union of clergy and gentry to promote the establishment of denominationalism in the entire education of Ireland. The popular feeling, however, seems, as a rule, to be in favor of united education.

National System.—Aid is granted to two classes of schools; those *vested* in the commissioners, or in trustees; and *non-vested*, being the property of private individuals. All National Schools receive pecuniary aid in salaries to teachers, *results' fees*, and books, and the benefits of inspection and training. Vested Schools alone receive building grants. National Schools comprise *Model Schools* (District and Minor), which are wholly built and supported by parliament, are under the exclusive management of the board, and are intended to promote united education, to exhibit the most improved methods of instruction, and to educate young persons for the office of teacher; *Agricultural Schools*, with farms and gardens, which are devoted to the illustration and introduction of the most approved systems of husbandry and tillage, and which are divided into four classes: (I) First Class Agricultural Schools, subdivided into (1) those under the management of the board, and (2) those under local management; (II) Ordinary Schools, subdivided into (3) those with farms, and (4) those with gardens; *Convent Schools*, which receive aid as Non-Vested Schools, and in which the members of the community may act as literary teachers; *Work-house Schools*, and *Schools attached to prisons, asylums*, etc. School-houses are not to be employed as the stated places of divine worship of any religious community, nor for the transaction of any political business; and no emblems of denominational character are to be exhibited in them during the hours of united instruction. In Vested Schools, such pastors or other persons as shall be approved of by the guardians of the children, shall have access to them in the school room for the purpose of giving them instruction there; in Non-Vested Schools, it is for the patrons and managers to determine what religious instruction shall be given in the school room. The patrons and managers of all National Schools have the right to permit the Holy Scriptures (either in the authorized or in the Douay version) to be read at the times set apart for religious instruction.—The local government of the schools is vested in local patrons or managers, who can appoint and dismiss teachers, under certain restrictions. Inspectors visit their schools at least three times a year, communicate to the local managers their criticisms and suggestions, and report fully the results of their inspection to the Board. All National-School teachers are divided into the following classes: principals, assistants, junior literary assistants, work-mistresses, and teachers of industrial departments. There are also three classes of Monitors, whose term of service is three years, and whose rate of compensation ranges from £4 to £18 per annum.—The only training establishment for teachers in connection with the Board is the Institution, in Marlborough Street, Dublin, which was opened January 15., 1838. It is capable of accommodating about 100 masters and 75 mistresses, who are divided into three classes: (1) the General or Ordinary Class, composed of teachers of National Schools, who have been recommended by the inspectors; (2) the Special or Extra Training Class composed chiefly of teachers who have been selected from the General Class for additional training; and (3) the Extra Class, composed of a limited number of respectable and well-informed young persons who wish to qualify themselves to act as teachers. Teachers summoned for training are allowed their traveling expenses, are provided with free board and lodging, receive a small weekly gratuity, and also their class salary subject to a deduction of £15 per annum for a substitute. Teachers are classified of the 1st, 2d, and 3d class, and promotion from one to the other is regulated partly by examination, and partly by the efficiency of their schools. Male teachers of the 1st class receive £58 a year; of the 3d class, £32. Female teachers of the 1st class receive £48; and of the 3d class, £25. The National School Teachers Act (1875) was designed to supplement the incomes of the teachers by granting state aid corresponding to local contributions. The latter, however, only amounted to £32,055 instead of £60,000, as was contemplated. National teachers receive, in addition to their class salaries, the total amount of *results' fees* earned in the schools, which are paid according to a fixed programme. Thus for children (4 to 6 years of age) who know the alphabet, and can spell and read words of two letters, the fee is 3s. each; for reading in the First Class, 2s., etc. The whole number of classes is six, besides the infants' class. These classes are numbered from 1 upward to 6, the 5th and 6th being each divided into a first and a second *stage*. The common branches of instruction, including grammar, geography, and needle-work, are taught.

Educational Condition (National System).—On the 31st of December, 1875, there were 7,267 National Schools in operation (Ulster, 2,737; Munster, 1,822; Leinster, 1,551; Connaught, 1,157). The Vested Schools numbered 2,105; the Non-Vested, 5,162. The number of children who attended some part of the year 1875, was 1,011,799; the number on the rolls, on the last day of the month immediately preceding the annual examination, was 577,541; and the average daily attendance was 389,961. Of the children taught during the year, 79.2 per cent were Roman Catholic children. The *Model Schools*, in operation during 1875, were 29: in Dublin, 3; and, in other parts of the country, 26. The average attendance of pupils was 8,229, out of an enrollment of 16,601, including 4,989 Catholics, 4,747 Presbyterians, 5,673 Episcopalians, and 1,282 of other persuasions. The number of *Work-house Schools* under the board was 156, with 13,835 pupils enrolled, and an average daily attendance of 7,143. The total number of students admitted into the Training Establishment was 294, of whom 150 completed their training within the year.—The number of teachers under the board was as follows: principals, 7,067 (males, 4,371; females, 2,696); assistants, 3,037 (males, 713; females, 2,324); junior literary and industrial assistants, 177; work-mistresses, 325. The total amount of payments to teachers of every kind made from all sources during the year ending March 31., 1876, was £491,991.4s. The entire sum locally contributed for education, in 1875, was £84,860, 4s. 9d. In 1875, there were 21 First-Class Agricultural Schools, under the exclusive management of the board, and 11 under local management. The number of school farms was 228.—In 1874—5, the evening schools numbered 138, with 10,343 pupils on the rolls, and 4,250 in average attendance. There were 22 industrial schools, with 1,565 pupils enrolled, and 1,397 in average attendance.

Other Educational Agencies.—The Church Education Society, founded in Dublin, in 1839, as a protest against the National School Board, for a time gathered in a large number of pupils. In 1867, it had 1,451 schools, with 63,549 pupils. Since then, these numbers have declined; many of its schools have been transferred to Diocesan Educational Boards. The Kildare-Place training and model schools are usually attended by about 50 students, males and females.—The Institute of Christian Brothers (R. C.) founded in Waterford, in 1802, for the education of poor children, in 1876, had 291 schools, and 31,878 pupils enrolled. The Incorporated Society in Dublin for promoting English Protestant schools in Ireland holds a large amount of landed and other property, having an income of £8,000 a year. It has 8 boarding institutions, 6 for boys and 2 for girls, besides 10 day schools.—The other classes of schools named in the Commissioners' Reuort of 1868 are: Irish Church Mission, attended by 1,726 pupils; Island and Coast Society, by 159; Wesleyan, by 720; Presbyterian, by 409; Society of Friends, by 117; Religious Orders of Men's Schools, by 706; Miscellaneous, by 954. The total number of private schools was 1,165, of which 690 were assisted by endowments.—The Sunday School Society for Ireland was founded in 1809. On the 1st of January, 1876, there were, in connection with it, 2,342 schools, attended by 184,589 scholars, and 16,560 gratuitous teachers.

Secondary and Superior Instruction.—The chief educational institution is the University of Trinity College, in Dublin, founded in 1591. In its original charter, Queen Elizabeth nominated a provost, three fellows, and three scholars, to constitute, with their successors a body corporate. The number of members has since then been increased; and, in 1876, consisted of a provost, 7 senior fellows, 26 junior fellows, and 70 scholars. The system of instruction is superintended by the fellows, together with a number of professors (35, in 1876). Students, after an examination in Greek, Latin, arithmetic, English composition, history, and geography, are admitted as fellow commoners, pensioners, or sizars, which last class is limited to 30, and is partially maintained out of the college funds. The course of instruction extends over four years. A medical school is attached to the university, to which has lately been added a school of engineering. The college has a library of 160,000 volumes; and its income, in 1873, was £61,324. The average number of students on the books of Trinity College is 1,100.—In 1845, an act was passed by Parliament for establishing new colleges in Ireland, and three colleges, called Queen's Colleges were, in 1849, established under this act,—at Belfast, Cork, and Galway. In 1850, the Queen's University in Ireland was founded at Dublin, with power to confer degrees on the students of the three Queen's Colleges. The number of students attending the colleges, in 1874—5, was 783.—The Roman Catholic university of Dublin was organized by the Catholic bishops of Ireland, in 1854, and depends for its maintenance wholly upon the voluntary contributions of the Roman Catholic people of Ireland. It has five faculties,—theology, law, medicine, philosophy and science, and letters. A number of Catholic colleges have been affiliated with the university.—A Presbyterian institution, Magee College, was opened in Londonderry, in 1865; a Methodist College, in Belfast, in 1868.

Special and Professional Instruction.—The Royal College of Science for Ireland was established in 1867, and is intended to supply a complete course of instruction in mining, agriculture, engineering, and manufactures.—Maynooth College, a Catholic seminary for candidates for the priesthood, was founded in 1795. All Hallows College, near Dublin, is intended to train missionaries for the Catholic Church. The Presbyterians have a theological school (the General Assembly's College) at Belfast.—The higher education of women, in Ireland, has been neglected; but recently, amongst others, the following institutions have been established: The Queen's Institute, Dublin, opened, in 1861, "for the employment of educated women," the educational classes being modeled on those of Cheltenham College; Alexandra College, Dublin, on the plan of Queen's College, London; and the Ladies' Collegiate School, Belfast, opened in 1859. Trinity College, Dublin, and Queen's University hold examinations for girls and women.

ITALIAN LANGUAGE. The Italian language has no claims commensurate with those of the German or the French, to a place in any regular course of instruction the object of which is general culture, and which, to that end, embraces the study of one or two modern languages. Its value for this purpose has not, however, been without advocates. Thus L. Gantter, the author of the article on the Italian language, in Schmid's *Encyclopädie* (vol. III.), in discussing the relative importance of the principal modern languages for the German gymnasia, from an educational point of view, assigns the first place to English, the second to Italian, and the third to French; and he appeals to Goethe, Niebuhr, Raumer, Gregorovius, and many other celebrities, to prove that the educational impulse which may reasonably be expected from a study of the Italian language and literature, would prove stronger and more conducive to a general development of the mental faculties than that received from the study of French. This view, however, has found but few adherents; and, except in Austria, where, from practical and business considerations, the study of Italian is more extensively pursued than in any other country, precedence in the study of modern languages is given to English, German, and French. Italian has, however, special importance for all students of music, vocal and instrumental, as well as for students of the fine arts. Music, in every country of the world, uses to a large extent technical expressions borrowed from the Italian; the Italian opera is exceedingly popular in every large city of the civilized world, and there is no student of the fine arts who is not anxious to complete his study of art in Italy. These considerations have not only created a demand for instruction in Italian, but they are sufficiently important to recommend to students of music and of the fine arts a much more general study of this beautiful language than is to be met with at present; and it is to be regretted that universities, colleges, academies, and especially female institutions of a higher grade, do not, more frequently than is the case at present, afford to their pupils an opportunity to learn this language.

The Italian language is one of the so-called Romanic languages (q. v.), and arose from the Latin in a way similar to that of the French. The new language was designated, to distinguish it from the Latin, *lingua vulgaris* (*volgare*), and greatly varied in different parts of the country. Dante, in his work *De vulgari eloquio*, enumerated fourteen dialects, all of which, the Florentine not excepted, he declared to be unsuited for the literature of Italy. The written language was in the main fixed, as it now is, by Dante, Petrarch, and Boccaccio,—all Tuscans and Florentines; and Italian literature attained its golden age at an earlier period than any other literature of modern Europe. The Italian language is spoken by almost the entire population of the kingdom of Italy, in the two little states of Monaco and San Marino, on the island of Corsica, in the Swiss canton of Ticino, and several communes of the cantons Grisons and Valais, in the southern part of the Tyrol, in Triest and other cities of Istria and Dalmatia, and in the Hungarian free city of Fiume. The entire territory in which the language is spoken contains, probably, a population of about 28 millions.

The Italian language is celebrated for its euphony, though many linguists prefer the Spanish in this respect. The smooth and melodious character of the former is due, to a large extent, to an extraordinary predominance of vowels, every indigenous word of the language, with the exception of only five (*il*, *in*, *con*, *non*, *per*), ending in a vowel sound. This euphony is somewhat marred by the exuberance of the vowel *i*, which, in the termination of Italian words, has outgrown all just proportions—as much so as the German *e*. The pronunciation is very simple, as almost every sound is represented by only one letter or combination of letters. It has no silent letters, and each of the vowels has only one sound, long or short; these sounds, in the main, correspond to those of the German vowels. The letters *k*, *w*, *y*, and *x* are not found in the Italian alphabet; and for the *ph* and *th*, occurring in the words of Greek origin, it has substituted the letters *f* and *t*. Like the French, it has lost the case-endings in the declension of nouns, and has introduced from the language of the Teutonic conquerors the definite article, the use of the personal pronoun before the verb, and the auxiliary verb. It exceeds the French in the richness of its augmentatives and diminutives, in the greater varieties of the accents which may affect one of the last four syllables of the word, in its greater freedom of inversion, and in its freer and bolder phraseology. In a lexical point of view, the Italian bears a more striking resemblance, than either French, Spanish, or Portuguese, to the common mother of these languages, the Latin.

The special motives which, in a majority of cases, led to a study of this language, naturally suggest a method of instruction different from that pursued in the teaching of French and German. The beauty of the language, which is reflected in its structure and pronunciation, and which is so intimately connected with the lofty position which Italian art has attained in the history of civilization, should be pointed out with special care. Exercises in grammar and translation will require comparatively little attention; for not only is the structure of the language unusually simple and easy, but its study is hardly ever begun until, in addition to the vernacular, the knowledge of some other language has been acquired. All the greater prominence, on the other hand, should be given to the practice of conversation; for only in this way will the pupil fully realize the superiority of the language in point of beauty and euphony, and prepare himself for a visit to the country which, more than any other, captivates the affections of every artist. The literature of Italy scarcely admits of a comparison with that of Germany or France; but the golden age of Italian literature presents names which will never fail to recommend the study of the Italian language to advanced scholars. Dante ranks with Homer, Virgil, Milton, and Goethe, as one of the greatest poets of the world, whom all civilized nations will always admire; and Italian would be studied, if it were only to read the *Divina Commedia*. And Dante is by no means the only great representative of Italian literature. In the middle ages, Italy stood for a time at the head of modern civilization (see ITALY); and, though it has been unable to maintain this place, the literary world will never cease to admire Petrarch, Boccaccio Ariosto, Tasso, and Macchiavelli. As the ability to read this language is acquired by most students in a comparatively short time, and as the interest they take in Italian literature will chiefly center in the great names just mentioned, the intelligent teacher will, as soon as it is practicable, begin with the reading of one of these authors. As the poets use a great many licenses in the alteration, addition, and omission of sounds, and also a multitude of exclusively poetic words, it is best for the student to begin with a prose writer; and Macchiavelli's *Il Principe* or *Istorie Fiorentine*, in which the style is as elegant as it is plain, will rarely fail to interest and satisfy him. In the more recent periods of Italian literature, the writers Goldoni, Gozzi, Alfieri, Foscolo, Manzoni, Leopardi, Silvio Pellico, Niccolini have gained a well-deserved celebrity; and especially Manzoni's *I Promessi Sposi*, and Pellico's *Le mie Prigioni* have become favorite books of Italian students.

The Italians are greatly behind many other nations in the philological study of their language. Buommattei's grammar *Della lingua toscana* (1648), which was adopted by the *Accademia della Crusca*, only treats of letters, nouns, and articles. The first complete and systematic grammar, which has served as the basis of nearly all modern works, is the *Regole ed osservazioni*, by Corticelli (1785). In Germany, a good historical grammar of the Italian language has been written by Blanc (1844); and, in Italy, Pesavento has recently published a valuable comparative view of Latin and Italian, under the title *Metodo Comparativo*. In the English language, grammars of, and guides to, the Italian language have been published according to Ahn's, Monteith's, and Ollendorff's methods, and by Biaggi, Cuore, Fontana, Foresti, Sauer, Thimm, Toscani, Vergani, Weale, and others.—The lexical literature began with the meager dictionary of Minerbi (1535). The first edition of the famous *Vocabolario degli Accademici della Crusca*, limited to the Tuscan dialect, appeared in 1602; the fifth revised edition was begun in 1843. The first dictionary embracing within its scope all the Italian dialects was by Alberti (6 vols., 1797—1805). Other dictionaries of this kind are the *Dizionario della lingua italiana*, published at Bologna (7 vols., 1819—26); the works by Mortara, Bellini, Codagni, and Mainardi (8 vols., 1845—56); those by Tommaseo and Bellini (1864); Carena (12 vols., 1851—3); and Trinchera (2 vols., 1864). Italian-English dictionaries have been published by Graglia, James and Grassi, Meadows, Millhouse, Robert, Weale, Wessely, and others.—There are Italian readers for English-speaking students by Foresti, Roemer, and others.—The principal historians of Italian literature are Tiraboschi (14 vols., 1772—83, and many editions since); Guinguene (1811—19); Maffei (1834); Cimoprelli (1845); Emiliano Giudici (1851); Malpaga (1855).

ITALY, a kingdom of Europe, having an area of 114,409 square miles, and a population, in 1870, of 26,801,154. Almost the entire population speak the Italian language, and belong to the Catholic Church. From the downfall of the Roman Empire, until 1870, when the annexation of the remnant of the Papal dominions completed the modern kingdom of Italy, the country was but rarely, and only for a short time, united under one ruler. Generally, it was broken up into a number of small states, only connected with each other by the bond of a common language. In the congress of Vienna, in 1815, Italy was divided into the kingdoms of Sardinia and the Two Sicilies, the grand-duchy of Tuscany, the duchies of Parma, Modena, and Lucca, the Papal States, and the Lombardo-Venetian kingdom, the latter remaining with Austria. In 1859, all these states, with the exception of a part of the Papal States and Venetia, were annexed by the king of Sardinia, who then assumed the title of king of Italy. Venetia was added in 1866, and the Papal States in 1870. United Italy now occupies the tenth place among the nations of the earth, in regard to population, and the thirtieth in regard to area.

Educational History.—After the destruction of the Roman Empire by Odoacer, in 476, education in Italy was for a long time at a low ebb. The Ostrogoths, who, in 493, overthrew the rule of Odoacer, were the most intelligent among the German tribes, and showed themselves receptive of literary impulses; but, unfortunately, their rule did not last long enough to test their productive power in the field of education. Their king, Theodoric the Great, who is said to have spoken four languages, placed at the head of his government one of the greatest scholars of the age, Cassiodorus, who founded a theological school, which was to connect the remnants of the civilization of the Romans and Greeks with Christian theology, and which served as a model for the theological schools of the middle ages. Having, at the age of 70, retired to the monastery which he had founded, he not only taught the monks to devote themselves to the copying of ancient manuscripts, but, by arranging the branches of a liberal education into the *trivium* and *quadrivium*, he drew up a programme of instruction, which was adopted throughout the middle ages, and long after. Another statesman in the service of Theodoric, Boëthius, was a still greater scholar than Cassiodorus; and, by his translations of several of the works of Aristotle, as well as by his own works *De musica* and *De consolatione philosophiæ*, exerted a far-reaching influence upon the entire civilization of the middle ages, and became, jointly with Cassiodorus, the founder of the educational system of the scholastics (q. v.). The reign of the Ostrogothic kings is also noted for the foundation of the Benedictines (q. v.), whose schools, for centuries, were among the few places of refuge for the friends of education and civilization. Under the reestablished rule of the Greek emperor, as well as under that of the Lombards, little was done for education. Pope Gregory I. was a patron of schools; but, for several centuries after his death, Italy had no one who, as a scholar and teacher, can be compared with Bede and Alcuin. The elevation of Gerbert, the greatest scholar of the age, to the papal throne, under the name of Sylvester II., awakened new interest in scientific studies; and the great increase of power which the papacy attained through the energy of Gregory VII. and his successors, excited among the young Italian clergy an emulation for distinction which led to considerable progress in literature and education. In the 12th century, Italy became the birthplace of the modern universities. These institutions arose as free associations of scholars who did not belong to the clergy, and were only bound together by their common devotion to science. The growth of the universities was rapid; so that, after an existence of half a century, the law faculty of Bologna was attended by over 12,000 students. The medical school of Salerno also became one of the most famous schools of the middle ages, and was attended by students from all parts of the world. In these two schools, Bologna and Salerno, we see for the first time in the middle ages a free secular science develop itself independent of the church and of clerical influence. Besides giving to Europe its first universities, Italy also took the lead in the revival of classical studies. Dante and Petrarch, both ardent admirers of the intellectual greatness of classic antiquity, became the founders of the first golden age of Italian literature, which was the first among the literatures of Europe to attain a high degree of excellence. A number of teachers, proceeding from this school, traveled from city to city, in order to instruct all those desirous of learning. The first of these traveling teachers was Giovanni Malpaghino, a pupil of Petrarch, who counted among his pupils most of the learned men, who, in the beginning of the 15th century, raised the Roman classics from the obscurity which had for so long a time surrounded them. Emmanuel Chrysoloras, a learned Greek, was the first to awaken an interest in the language and literature of his native country, which he taught in Florence, Milan, Venice, and Rome. With the arrival of the learned Greeks in Italy, after the overthrow of the Byzantine Empire, the study of the Greek language received a fresh impulse, and a knowledge of that language was considered necessary to a complete education. During this time, the republics and princes of Italy vied with each other in protecting and promoting the cause of education. This was especially the case at Florence, where the family of the Medici, particularly Cosimo and Lorenzo de' Medici, patronized science and art with an enthusiasm which has rarely been equaled in the history of the world. Among the many Florentine representatives of classical learning, were Tommaso Parentucelli, afterward Pope Nicholas X., Niccolo de' Niccoli, Gemisthius, Plethon, Marsilius Ficinus, and Pico of Mirandola. In Venice, science was cultivated rather by single individuals than by the state. In Naples, king Alfonso gathered around him a number of learned men, among whom the names of Lorenzo della Valle and Antonio degli Beccadelli are best known. In Milan, Francisco Sforza was an active promoter of the sciences; while the lesser courts of Mantua, Padua, and Ferrara also had a number of men eminent in literature and science. The popes also called to their courts distinguished scholars, among whom Mafeus Vegius occupied a prominent position as a writer on education. With the election of Tommaso Parentucelli to the papal chair, Rome became the principal seat of classical learning. Under his successors learning rapidly declined, until Leo X., again raised it to a higher position. The principal scholars of this period were Cardinal Bembo and Petrus Pomponatius. Italian learning from the 14th to the beginning of the 16th century, constitutes an important epoch in the general history of education. It put an end to scholasticism, and prepared the way for the scholarship of Germany. Its general features are thus characterized by Raumer in his *History of Pedagogy*: "The learning of the middle ages, the scholastic especially, gave place, by degrees, to the classical. The Italians became enthusiastic in their awakened love for the old Roman authors, in whom they recognized their ancestors; and their understanding of the Greek classics was promoted by native Greek teachers. After they were enabled to read Plato, a passionate love of the beautiful arose within them, and likewise a corresponding abhorrence of the hideousness of scholasticism, which based itself upon Aristotle; but, when they studied Aristotle in the original, and learned how entirely different he is from the Aristotle of the scholastics, the authority of the latter began at once to decline. Yet the classical philologists, with the exception of Dante and Picus, overlook the depth, and the earnest love of truth which characterized the more eminent of the scholastics. And moreover, there were many among them who became so foolishly enamored of the beauty of the classical form, whether in prose or in poetry, that they imagined their own externally correct imitations of the ancients to possess a worth intrinsically equal to their models; while such imitations, on a close inspection, often proved to be but hollow and delusive phantoms without either life or spirit. After the elevation of the Italian language into the vernacular, it gradually supplanted the Latin, which, in the middle ages, had been treated as the vernacular, and as such was subjected to the varying caprice of writers. The ancient classics, Cicero especially, then became models for imitation, but an imitation mostly of a lifeless and servile sort. Only a very few, Laurentius Valla, for instance, applied their philological attainments to New Testament exegesis. Toward the Hebrew tongue and the exegesis of the Old Testament a great and decided repugnance was manifested. The severe and sacred earnestness of the Old Testament frowned harshly upon every phase of pagan Epicureanism; while the latter manifested no desire to become acquainted with its own depravity. Pagan sentiments, a pagan life, and writings imbued with paganism, were characteristics of Italian scholars, and these were often united to an orthodox faith and a pious enthusiasm—united too, it may be, innocently, since the examples in the teachings of the clergy were such as to drown and deaden the voice of conscience. Against the lamentable corruption of the church, both in its head and its members, the greater part arrayed themselves—a few, like Dante, with holy zeal, but the greater part, only with mocking satire. Such, in brief, was the character of those Italian philologists to whom our attention has been directed. And these men exerted a vast influence upon the learning of the Germans and Dutch. Rudolphus Agricola, Reuchlin, Regiomontanus, Erasmus, and many other distinguished scholars went to Italy to perfect themselves. The Italians became their patterns; upon these they modeled themselves; to equal them, or if possible to surpass them, was their highest aim." In the course of the 16th century, Italy gradually lost her reputation as the foremost cultivator of classical studies. Though she still produced men like Ariosto and Tasso, Giordano Bruno and Galileo Galilei, the character of her schools degenerated. Only in the province of fine arts Italy continued to be the teacher of the civilized world; and music in particular was, in this and the following centuries, chiefly indebted to Italy for its progress. After the foundation of the order of the Jesuits, the higher schools in the larger portion of the Italian states passed gradually under their control; and, for a long time, the higher classes of the nation may be said to have been educated by the Jesuits. (See JESUITS.) — The first of the Italian states to abolish the supervision of the schools by the church was Sardinia. In 1729, it withdrew the supervision of secondary schools from the religious orders, and provided that teachers of this class of schools should be educated in a college connected with a university. In 1772, a decree was published which provided for primary schools. The French occupation gave a decided impulse to education, and primary schools were established in every town. Upon the restoration of the old government, in 1814, the laws passed during the French rule were abolished; and, although, in 1821, an attempt was made to re-establish common schools, no decided progress was made, until, in 1844, a normal school for teachers was established in Turin. A law was passed in 1848, and revised in 1857, which sought to raise the schools of Sardinia to a level with those of Germany, Switzerland, and other countries. The other Italian states were all provided with schools, but in none of them was much attention paid to the education of the people; and their educational condition was generally admitted to be greatly inferior to that of most other European countries. Only in Lombardo-Venetia had the school system of the Austrian empire been successfully introduced, and produced satisfactory results. Upon the creation of the kingdom of Italy, in 1859, a school law was passed, which introduced the system of Sardinia into the annexed provinces. Since that time, the schools have progressed slowly, but steadily; and it has been the aim of the government to break as much as possible the influence of the church in educational matters. An official report published in 1866 (*Statistica di Regno d'Italia.—Istruzione pubblica e privata*, Firenze, 1866) states that, owing to the extraordinary efforts made by the government, the increase in the number of public schools, in 1863, amounted to 4,363, and, in 1864, to 4,354; and the increase in the number of pupils, in 1863, to 235,210, and, in 1864, to 135,887. Nevertheless, much remains to be done; for, in 1874, there were in Italy only 70 pupils in the public schools to every 1,000 inhabitants; while, in Switzerland, there were 155; in Germany, 152; in Denmark, 135; and in France, 131.

Instruction in all the grades is regulated by the law of Nov. 13., 1859, which was amended by the decrees of Sept. 22., and Nov. 21., 1867. The department of education, according to the law of 1859, is presided over by a minister of public instruction, who is assisted by a secretary general, a supreme council of public instruction, and a legal counselor. The department is divided into three divisions, each with its own chief; and these again are subdivided into two sections, each with its own superintendent.—The first division is the financial and economical, which has charge of the funds devoted to public instruction. The second has charge of the fine arts, antiquities, public libraries not connected with universities, the public archives, etc. The third division superintends the instruction given in the universities and the special schools. Secondary, as well as primary instruction, instead of forming a separate division, has a central superintendent, who has entire charge of both departments of instruction. A supreme council of public instruction, consisting of fourteen ordinary and seven extraordinary members, is constituted under the presidency of the minister. This council must be consulted on new educational laws, on contests between school authorities, on applications for professorships, and on offenses committed by professors of normal and secondary schools; it may propose new educational laws to the minister; it examines text-books, passes judgment on students suspended by their rectors, and presents every five years a report to the minister of instruction, on the condition of all the branches of education. By the law of 1859, three general inspectors were appointed,—one for superior, one for secondary, and one for primary, special, and normal instruction. Each one of the 69 provinces of the kingdom has, for its highest school authority, a school board, consisting of the prefect as president, the superintendent as vice-president, and six councilors, two of whom are appointed by the ministry, two by the provincial deputation, and two by the magistrate of the principal city. The members appointed by the elective councils hold their office for three years, but can be re-appointed. They depend upon the prefect who is entrusted with the general direction of all the schools, public as well as private, and upon the superintendent of the province, who has the care of all the schools in his district; while the school board enforces the laws and rules relative to the primary, secondary, and normal schools of the province. The board also orders extraordinary inspections of the schools; and, in urgent cases, has the power to close them, but must immediately notify the minister of the fact.

Primary Instruction.— Primary instruction is compulsory throughout Italy, according to the law of 1859. The school age is from 6 to 14 years; and all parents neglecting to send their children between these ages to school, are liable to a fine. The course of instruction comprises four years. The schools are composed of a lower and a higher grade, each of two classes. In the former are taught, religion, reading, writing, elementary arithmetic, the elements of the metrical system, and the Italian language. In the higher grade, in addition to the studies of the lower, are taught composition, penmanship, book-keeping, elementary geography, the national history, and elementary science. Schools of the lower grade, one for boys and one for girls, must be maintained by every commune, although the minister may give permission for two communes to unite, if they are too poor to support separate schools. Schools of the higher grade must be established in all towns with more than 4000 inhabitants. Communes of less than 500 inhabitants must provide a mixed school for both sexes, if there are 50 children of school age. The school term extends from Oct. 15. to Aug. 15. Examinations both oral and written are held every six months, and are directed by the municipal superintendent, unless state officials interpose. Certificates are granted promoting the candidates, and prizes are given to the most deserving. The persons conducting the examinations are, for the lower classes, the teachers of the classes, and for the next higher, as well as for the highest grades, the class teachers and two other teachers of the same or a lower grade. Religious examinations are conducted by the clergy, but are obligatory for Roman Catholic children only. Every examiner can add ten marks to the results of the written and oral examinations, on account of the conduct of the pupil during the year. Six marks constitute the standard of approbation. Male teachers must be eighteen, and female teachers seventeen years old. Having passed the necessary examination, they are appointed for three years, and unless notified six months before the expiration of their term, are considered re-appointed. Teachers may punish their scholars by admonition, a note of censure in the school registers, separation from their comrades, or suspension, of which the parents must be informed. Harsh and offensive words, corporal punishment, and extra lessons as penalties are forbidden. Suspension for a week or expulsion can be inflicted by the municipal superintendent; but each case of expulsion must be brought to the notice of the mayor, and must be approved by him. The minimum salaries paid to teachers in cities are 900 and 700 *lire* (1 *lira* = \$0.19.3) for the higher and lower grades respectively, and 600 and 500 *lire* in the country. A fund to provide pensions for teachers in their old age has been established, to which teachers contribute two and one-half per cent of their salaries, and from which pensions equal to their salaries, are paid to all who have reached the age of fifty-five, and have taught for thirty years. A pension equal to one-third of their salaries is granted to those who are incapacitated after fifteen years of service. Widows of teachers receive pensions as long as they remain unmarried. A private school may be kept by any citizen who possesses the necessary diploma and a certificate of good morals. A written request for permission to open such a school must be presented to a district school inspector, who may refuse it, if he sees fit. He has also the power to visit and inspect all private schools, and make such changes in their arrangement as may seem necessary. In urgent cases he can close the schools. No text-books are prescribed for private schools, but the government can prohibit such books as it may deem offensive. Besides the public and private day schools there are also evening schools for adults of both sexes, and Sunday improvement schools. The number of public day schools, in 1872, was 34,213: of which 18,243 were for boys; 12,732, for girls; and 3,238, with mixed classes. In addition to these there were 9,167 private day schools, making the total number of primary schools 43,380. These schools are distributed very unequally in the northern and southern portions of Italy. Thus, in the northern province of Novara, there is a school for every 368 inhabitants, and in Turin one for every 355 inhabitants; while the southern province of Basilicata has only one school for 1,304 inhabitants, and Calabria, one for 1,400. The number of evening schools was, in the same year, 9,809, and of the Sunday improvement schools, 4,743. Adding these to the 43,380 schools as above, we have about 58,000 schools affording primary instruction. The number of pupils in the day schools, in the school year 1871—2, was 1,745,467, of whom 1,553,389 were in the public schools, and 192,078 in the private schools. This number, 1,745,476, represents the largest attendance during the year, which generally occurs in the beginning of winter; during the summer months, the attendance fell off to 1,242,053. The number of pupils in the evening schools for adults was 375,947, and in the Sunday improvement schools 153,585.

The number of teachers in the primary schools, in 1872, was 23,479 males and 20,028 females, making a total of 43,507. In 1873, there were 42,118 schools (34,781 public, 7,337 private) with 44,430 teachers (of whom 9,329 were priests) and 1,797,596 scholars (993,120 boys, and 804,476 girls). In 1874, there were 42,920 schools (35,583 public, 7,337 private), with 45,596 teachers (8,927 priests), and 1,836,381 pupils (1,009,020 boys and 827,361 girls). In 1874, the government spent, for elementary instruction, 232,112 *lire;* the provinces, 129,665 *lire;* the communes, 22,067,133 *lire;* and other bodies, 611,727 *lire.* The normal schools are governed by the laws of June 24., 1860, and Nov. 9., 1861, and the course of study comprises three years. The first two years are devoted to a preparation for teaching in the lower grades; and, in the last year, the teacher is prepared for the higher grades. The course of study comprises religion and morality, pedagogy, the Italian language, exercises in composition, arithmetic, geometry, and book-keeping, the rudiments of natural history and natural philosophy, penmanship, drawing, music, and the principles of hygiene. For admission to the normal school, boys must have completed their sixteenth, and girls their fifteenth year. A model primary school is connected with almost every normal school, in which on certain days the students of the normal schools are permitted to teach under the direction of the professor of pedagogy. Normal schools are of three classes: those supported (1) by the government, (2) by the provinces, and (3) by private persons. The number of normal schools, in 1872, was 125, of which 48 (23 for boys and 25 for girls) were supported by the state, 21 (11 for boys, 10 for girls), by the provinces, and 56 (13 for boys and 43 for girls) were private institutions. The number of students in the same year was 6,130, and the number of teachers 845. A higher school for girls was founded in 1861 in Milan; as it was found that a large number of girls attended the normal schools without any intention of becoming teachers, but with the sole object of receiving a higher education. The favor with which this school was received, and the success which it met, induced other cities to provide similar schools. The course of study comprises ethics, the Italian language and literature, hygiene, the natural sciences, geography, history, the French language and literature, arithmetic, book-keeping, penmanship, gymnastics, and needlework. Besides these studies, which are obligatory for all the schools, some have also introduced the study of German and English. The course of instruction comprises three years in all the schools except in Milan, where it is four years, in order that more attention may be paid to natural science. The school in Milan was for a time free; but, as it was seen in other cities that a fee could be required without detriment to the school, a charge of 50 *lire* was made, which is the usual fee in the other cities. The conditions of admission are an age of 12 years, graduation from the primary schools, and the passing of an examination. The number of schools, in 1872, was 8; and the average number of pupils, 50. The largest number (124) of pupils was in Milan, and the lowest number (33), in Padua. Besides these schools, there are other high schools for girls, which board either all or a part of their pupils. These schools may be divided into five classes: (1) Those schools which depend immediately upon the government. These are six in number and board all their pupils. The course of study comprises, besides the studies pursued in the high schools for girls, music, dancing, foreign languages, etc. (2) Those schools, which are under the direction of the government, but do not receive any aid from it. These are similar to those of the first class. (3) The schools (*conservatori*) of Tuscany. These were founded by Leopold I., towards the end of the 18th century, who endowed them with the property of supressed monasteries, and who gave the instruction into the hands of lay sisters (an association of pious ladies who have an organization similar to that of convents), with whom it still remains. (4) The schools of St. Mary, in Sicily, which were founded in 1720, and received the canonical institution in 1735; they were thus recognized as ecclesiastical corporations. Towards the close of the century, however, several of these institutions were reorganized by the state as lay corporations. (5) The schools connected with convents, which, after the suppression of the convents, continued to exist under the general association law. The total number of schools of these five classes was, in 1872, 570 with 2,723 teachers, and 17,158 boarding and 12,937 day scholars. The expenses amounted to 1,285,514 *lire.*

Secondary instruction.—Secondary instruction in Italy is of two distinct kinds.—classical and technical. The former is provided for in the gymnasia and the lyceums, and the latter in the technical schools. The classical course comprises eight years, of which the first five belong to the gymnasium, and the last three to the lyceum. The course of study in the gymnasia is as follows: Latin is taught 10 hours per week in the three lower, and 6 hours in the two higher classes; Italian, 7 hours in the three lower classes, 5 in the fourth, and 5 in the fifth class; geography, 3 hours in the three lower classes; arithmetic, 1 hour in the three lower, and 3 in the fourth and fifth classes; Greek, 5 hours; and history, 4 hours in the fourth and fifth classes. Every gymnasium has six ordinary professors; that is, each one of the five classes has one professor for the literary instruction, while the sixth professor teaches mathematics only. The instruction in the lyceums is divided among seven professors, and comprises the following studies: Italian, 6 hours in the first, and 4 in the second class; Latin and Greek, 5 hours in all three classes; history, 7½ hours in the first, and 4½ in the second class; mathematics, 6 hours in the first and second, and 2½ hours in the third class; philosophy, 4½ hours in the second and third classes; natural philosophy and physical geography, 5, and natural philosophy, 9 hours in the third class. The programme and the course of study are determined by the ministry of education, and are adapted by the faculty to each individual gymnasium and lyceum. After finishing the course in the gymnasium or in the lyceum, the pupil must pass an examination for graduation. The provincial gymnasia and lyceums may conduct their own examinations for graduation, if they conform in their course of studies to that of the royal schools; while the private institutions of this class must send their pupils to the royal schools to be examined for graduation. The gymnasia are governed by a director, and the lyceums by a president. The only provinces not having any secondary schools are Pesaro and Grosseto, while Milan and Venice have three. In 1874—5, there were, supported by the state, 103 gymnasia, with 9,296 pupils; and 80 lyceums, with 5,132 pupils.

Technical instruction in Lombardy was provided for by the Austrian law of 1818; but it was not given until 1851, when the *scuole reali* were founded, each consisting of six classes, of which three formed the lower, and three the higher course. In the other provinces of Italy, with the exception of Piedmont, there were no such schools previous to the unification. There were, however, similar schools supported by the municipalities, or private schools governed by different laws. There are, at the present time, technical schools in all the provinces of the kingdom, in some, belonging to the state, and in others, to the towns. The government has its own schools in Upper Italy, the Marches, Umbria, Rome, and Sicily, in which provinces, however, there are also schools belonging to the towns; while in Emilia, Tuscany, and Naples, they belong exclusively to the towns. One-half of the expenses of the state technical schools, with the exception of those in Sicily, is borne by the communes. In the technical schools belonging to the towns, the government has the right of inspection only. In consequence of the two grades into which the real schools of Piedmont and Lombardy were divided, the law of 1859 provided for the erection of two schools of different grades, each comprising three years' instruction, of which the lower school is called *scuola tecnica*, and the higher *istituto tecnico*. By a decree of November 28., 1861, the supervision of the technical institutes was transferred from the ministry of education to that of agriculture, commerce, and industry. The course of instruction in the technical schools comprises the Italian language, French, drawing, penmanship, the rudiments of history and geography, algebra, geometry, commercial arithmetic, and book-keeping. A supplementary course of one year was added in 1871, in which only such subjects were taught as were deemed requisite to supply the knowledge necessary in different vocations. This attempt succeeded admirably, wherever it was introduced. The technical schools are under the authority of a director, whose annual salary is 2,000 *lire*; while the professors receive from 1,100 to 2,000 *lire* each, according to the class and the grade they teach. For several years, instruction in the technical schools was free, as they were particularly intended to benefit the poorer classes; but as the better classes also sent their children to these schools, the same fees were introduced as in the gymnasia. The number of state technical schools, in 1869, was 55, with 5,571 students and 297 hearers. The number of communal schools that are managed in strict accordance with rules governing the state institutions was 72, with 4,594 students and hearers; and the communal schools directed in systems different from that of the state were 138 in number, with 1,409 students and hearers. In 1874—5, there were 63 royal technical schools, with 6,498 students. The technical institutes, which were first established in Turin, Venice, and Milan, were originally reorganizations of the technical schools in those cities; but, in consequence of their usefulness, they rapidly increased. According to the course of study of 1872, they are composed of five divisions: the physical and mathematical, the industrial, the commercial, the agricultural, and the administrative. To be admitted to a technical institute, the student must possess a certificate of graduation from a technical school, or show that he is proficient in the studies taught there, and must pass an examination in various branches. The number of institutes, in 1872, was 72, of which 39 belonged to the state, and 33 to the provinces, communes, or private persons. The number of teachers, including the presidents and the professors, was 881; and the number of students and hearers, 4,562. The number of institutes, in 1875, was 74. In order to promote secondary instruction and to accommodate such families as have no schools in their own towns, the government supports 26 institutes in which the students are boarded.

Superior Instruction.—There are, at present, 17 universities supported by the state, of which 8 (in Bologna, Naples, Padua, Palermo, Pavia, Pisa, Rome, and Turin) are first-class, and 9 (in Cagliari, Catania, Genoa, Macerata, Sassari, Sienna, Messina, Modena, and Parma) are second-class, universities. Besides these, there were 4 universities (in Camerino, Ferrara, Perugia, and Urbino), which are supported by the respective provinces. In order to be admitted as a student into a university, an examination is necessary, besides a certificate of graduation from a lyceum. In addition to the regular students, there are hearers, who do not require an examination, but only a certificate from a lyceum. The number of professors, and students, including hearers, in 1874—5, was as follows: Bologna, 81 professors and 557 students; Padua, 52 professors and 1,217 students; Palermo, 78 professors and 340 students; Pavia, 51 professors and 619 students; Pisa, 67 professors and 532 students; Rome, 81 professors and 470 students; Turin, 74 professors and 1,292 students; Cagliari, 40 professors and 61 students; Catania, 40 professors and 191 students; Genoa, 49 professors and 412 students; Macerata, 15 professors and 106 students; Messina, 45 professors and 94 students; Modena, 63 professors and 278 students; Parma, 42 profesors and 205 students; Sassari, 25 professors and 66 students; and Siena, 28 professors and 113 students; for Naples, which has 118 professors, it is difficult to estimate the number of students, as any native of the Neapolitan provinces may attend the university, upon obtaining permission from the rector. The number of students examined in 1869, was 1,775. The number of students in the four provincial universities, in 1874—5, was 264. The largest of these, Ferrara, had 88, and the smallest, Camerino, 31 students. In addition to the universities, there is an institute for higher studies (*Istituto di studi superiori pratici e di perfezionamento*) in Florence, which comprises three sections,—the philosophical and philological, the medico-surgical, and that of natural sciences. It was founded as a university in 1348, and, in 1874—5, had 46 teachers and 176 students.

Special Instruction.—Besides the engineers' schools established in connection with the universities of Rome, Padua, and Palermo, there were the following technical high schools in 1875: The engineers' school in Naples, with 15 teachers and 222 students; the higher technical institute in Milan, with 37 teachers and 189 students; the engineers' school and the industrial museum in Turin, with 18 teachers and 185 students, and 5 teachers and 128 students, respectively. Other special schools are as follows: The *Seminario vaticano*, the *Collegio romano*, the *Collegio urbano*, for missionaries, and the *Collegio di San Tommaso d'Aquino*, for Dominican monks, in Rome; the literary academy, in Milan, with 15 professors and 41 students (1875); a higher school in San Marino; numerous Catholic theological seminaries and colleges, a theological school, for the Waldensians, in Turin; Jewish theological schools, in Leghorn and Padua; three schools of veterinary science; two archæological schools, in Pompeii and Rome; 13 law schools, besides those established in connection with the universities; the commercial school in Venice; 23 nautical schools; the higher royal agricultural schools in Milan and Portici, the provincial agricultural institutes in Caserta and Mantua, the agricultural courses in nine universities, and the school of forestry near Florence; the mining schools in Caltanisetta and Agordo, and the special school for the production and treatment of marble in Carrara; 25 schools of fine arts; numerous conservatories, schools, and institutes of music; the military schools in Turin, Modena, Naples, Milan, Florence, Parma, and Pinerolo, and the naval school, with two divisions, in Naples and Spezia.—See MALFATTI, *Italien* (in SCHMID, *Encyclopädie*, vol. x.); for full statistical information, see the official publication of the Ministry of Education, and the official work, *Italia economica* (Rome, 1873).

JACOBS, Christian Friedrich Wilhelm, an eminent Greek scholar of Germany, born at Gotha, Oct. 6., 1764; died March 30., 1847. He was appointed professor in the gymnasium of Gotha, in 1785; and, in 1807, accepted a call to Munich to take the place of professor of ancient literature in the lyceum, and member of the Academy of Science. In 1810, he returned to Gotha, where he was appointed librarian in chief. Jacobs is the author of several popular Greek and Latin readers, which are still extensively used, and have been frequently imitated and translated into a number of other languages (*Elementarbuch der griechischen Sprache*, vol. I., 1805; 21st edition, revised by J. Classen, 1875; vol. 4., 1811; *Lateinisches Elementarbuch*, 1815, in 3 vols., also revised by J. Classen). With Rost he founded the *Bibliotheca Græca*, a collective edition of Greek authors with Latin notes (1826, seq.). Jacobs was one of the most enthusiastic admirers of Greek civilization, and, in a large number of essays and popular works, endeavored to awaken among the educated classes of Germany an understanding of, and an interest in, the spirit of Greek antiquity. He published a collection of his addresses and essays under the name *Vermischte Schriften* (8 vols., 1823—44). His famous address *Ueber die Erziehung der Griechen zur Sittlichkeit* (translated into English by President Felton), which he delivered in Munich in 1808, is still in high repute as a brilliant essay on education among the ancient Greeks.

JACOTOT, Joseph, a French educator, born in Dijon, March 4., 1770; died in Paris, July 30., 1840. He was made professor of Latin and Greek, at Dijon, about 1789, and, in 1790, was appointed by Napoleon to the chair of mathematics in the normal school, and shortly afterwards became secretary to the minister of war and director of the polytechnic school. In 1792, he joined the army as captain of artillery, and as such participated in the Belgian campaign. He afterwards returned to his native place, where he was at first professor of mathematics, and afterwards of Roman law. His espousal of the cause of Napoleon compelled him, upon the restoration of the Bourbons, to leave France, which he did in 1815, taking refuge in Belgium, where he supported himself for a time by private teaching. In 1818, he was appointed lecturer on French literature in the University of Louvain, and afterwards director of the Military Normal School. He returned to France in 1830, passed seven years in Valenciennes, and, in 1838, went to Paris, where he died in comparative neglect. It was during his residence in Belgium, while attempting to teach, in French, classes the members of which spoke only Flemish and Dutch, that the novel idea of overcoming this and similar difficulties, by a method peculiarly his own, first dawned upon him—a method which he afterwards expanded, and applied successfully to all studies. The central idea of the *universal method*, as it has been called, rests upon the intimate correlation of all knowledge. In other words, a single fact, known thoroughly, at first by careful observation, and, afterwards, by long and repeated contemplation, becomes the spur, if not the actual key, to the acquisition of other facts. In this way, starting from a single truth as a center, the mind is led to extend, in many ways, the circle of its conquests, till the whole domain of knowledge is included. It will be seen at once that this system requires unusually close attention and concentration of mind on the part of the pupil—two elements which can only be secured by a very great degree of enthusiasm and magnetic influence on the part of the teacher. The cause of the wonderful success achieved by it, in Jacotot's practice, was, that it compels the pupil to exercise his own powers thoroughly—in other words, that it is in entire accordance with the essential nature of all education, *i. e.*, the developing of innate power. His method of procedure in instructing his class at Louvain in the French language was to provide each pupil with a copy of Fénélon's *Télémaque*, having the French on one page and the Dutch translation on the other. With no aid from the teacher, the pupil was required to puzzle out the meaning of the text, and to recite it in French, no matter how barbarous the translation, at first, might be. This method is almost identical with that of Hamilton. (See HAMILTON, JAMES.) It has also the defects of the Hamiltonian method, the knowledge of a language so acquired being enough for practical purposes, but not sufficient for a critical or scholarly acquaintance with it. His method of teaching reading was the following: The teacher takes a book, and opening it at any place, points out the first word, pronouncing it, and requiring the class to repeat it. The next word is then pronounced with the first, the class repeating as before; then the third word, in the same manner, and so on. In this way, when each word in a sentence has, by frequent repetition, become known by sight, the pupil is required to find these words wherever they occur on the page. The words of the sentence are then divided up into syllables, and these syllables are searched for on the page by the pupil, as the words were before. The same is done with the letters. When the pupil has become perfectly familiar with the sentence, he is taught to write by placing before him the same sentence in script, and requiring him to copy it. His attention is then directed to each word separately, that he may note in just what respect the copy differs from the original, and correct it. The teacher corrects nothing himself, but by his questions calls special attention to the point needing correction, and requires the pupil to change it. In this way, by constant repetition and self-help, the pupil educates himself. The great success achieved by Jacotot, led to his enunciation of several maxims which took the shape of startling paradoxes, reflecting rather the exultation of an enthusiastic nature over a great discovery, than the calm, dispassionate spirit of the careful annunciator of a new truth. These maxims are: "All human beings are equally capable of learning;" "Every one can teach; and, moreover, can teach that which he does not know himself;" and "All is in all." Each of these maxims, while contradictory on its face, contains a germ of truth, which, only by the aid of robust imaginative power and special pleading, may be so amplified as to cover the broad field comprehended by the text. In the practical application of his system, Jacotot's directions are: *Learn some one thing thoroughly, and refer every thing to that.* To this end, the pupil must *repeat, reflect*, and *verify*. Jacotot's chief educational works are *Enseignement universel: Langue maternelle* (Louvain, 1822); *Musique, dessin et peinture* (1824); *Mathématiques* (1828); and various articles in the *Journal de l'emancipation intellectuelle*, a periodical established by himself for the advocacy of his peculiar views.—See QUICK, *Essays on Educational Reformers* (Cincinnati, 1874).

JAPAN. The empire of Japan (*Dai Nihon Koku*, or *Dai Nippon;* Chinese, *Jipun*, meaning *Sun-root*) comprises the four large islands Hondo (main island), Kiushiu, Shikoku, and Yezo, the Liu Kiu and Kurile (*Chishima*) groups, and nearly 4,000 small islands, many of which are but reefs. The entire area is 145,500 sq. m.; the population, by government census of 1874, was reported as 33,300,675, of whom nearly one-half were of the agricultural class, 167,000 Liu Kiuans, and about 20,000 Ainos in Yezo and the Kuriles. The indigenous, also the state or official, religion is *Shinto* (way or doctrine of the gods, *i. e.*, theology). The census of 1874 reported 128,123 shrines and 76,119 officials. *Shinto* is now being greatly modernized and modified by contact with the ideas of Christendom. Buddhism was introduced from Corea, in 552 A. D. After nine centuries of propagation, it became the popular religion, which it still is. There are nine great, and over twenty subordinate sects. The census of 1872 reported 98,914 temples and monasteries, 75,925 priests and monks, and 9,621 nuns; in all 211,846 *religieux* of both sexes, including students and families of bonzes. Christianity may also be considered one of the religions of Japan. There are now (1876) ten native churches, with over 1,000 members, a theological seminary, day and Sunday schools for both sexes, and an incipient Christian literature.

Japan was anciently inhabited, in the southern part, by a mixed race sprung from the waifs brought by the Kuro Shiwo from southern Asia and the Malay Archipelago. The Ainos occupied the central and northern portions. Neither of these races ever possessed any writing or records, so far as is known. In 660 B. C., a conquering race landed in south-eastern Kiushiu, and advancing northward, subdued the natives, and fixed their capital near Kioto, in central Japan. In the seventh century of the Christian era, in a great battle near Morioka — the Hastings of Japan—the Ainos were entirely defeated. The remnant fled across the straits of Tsugaru, and have remained in a state of pure savagery. By the fusion of the aboriginal and conquering races, with the occasional addition of Malay, Corean, and Chinese blood, the modern composite Japanese race has been produced.

The national history is mainly that of education and development. The conquerors knew the use of metals and agriculture, and composed odes, prayers, and poetic sentiments, but had no letters or writings. The ancient political system was feudalism, the mikado being suzerain, and the lands being held on the tenure of military service. In 285 A. D., after the conquest of southern Corea, by the empress-regent Jingu, Wani, a Corean, came to the Japanese court, and taught the heir-apparent Chinese letters, and, probably, the Confucian ethics. In 552, Corean missionaries introduced books, the writing of the Chinese classics, and the Buddhist images, *sutras*, and canon. This is the greatest educational event in Japanese history. The nobles and officials learned to read and write; and government records, histories, and literature began to be compiled. The official propagation of the new faith through the erection of temples, monasteries, and pagodas, and the location of the bonzes in each province, near and remote, opened a field for the schoolmaster, creating a limited, but for those days a large, reading class. Henceforward, the history of Japanese education is that of Japanese Buddhism. The most illustrious name of all the priest-pedagogues is Kobo (774—835), a scholar in Pali, Sanskrit, Chinese, and his own vernacular, and the inventor of the Japanese syllabary, or alphabet. This consists of 47 characters, abbreviated from Chinese ideographs. It has two forms: the "grass," script or running hand, and the square or "printing" form. He laid the foundation of the national success of Buddhism, by propounding a theological system in which Buddhism absorbs Shinto, and by declaring that the ancient and indigenous deities were but various manifestations of Buddha to Japan. After Kobo, Sugawara Michizané, who died 903 A. D., better known as Tenjin, an accomplished scholar, did much for the native literature and education. Until the twelfth century, the mikado ruled supreme from Nara to Kioto, both of which were famous educational as well as political centers. In 1192, Yoritomo was created *Sei-i Tai Shogun* (the officer styled *Tycoon* by foreigners, from 1853 to 1868), and fixed the military capital at Kamakura (about 35 miles from the modern Tokio). Henceforward, the government of Japan was virtually a duarchy, having two rulers, two capitals, and two centers of authority. Eastern Japan now became more and more civilized, and education spread apace. In general, only the bonzes and court nobles in Kioto constituted the learned class, the soldiers and farmers being totally illiterate. The bonzes were the scribes in camp, palace, and town, and almost the only teachers down to the Tokugawa period (1604—1868). During the Hojo rule (1219—1333) learning flourished. A fine library and school existed at Kanazawa, near Kamakura, besides the ancient seats in Kioto and Nara. The missionary tours and labors of Shinran and Nichiren, in the north and east of Japan, during this time tended powerfully to spread Buddhism, and with it letters and writing, and to create priests and monastic schools. The revival of Buddhistic studies and the founding of new sects produced much intellectual activity. The Ashikaga period (1335—1573) was one of civil war and the growth of feudalism. Education and learning languished during this time; and ignorance, except in the palace and monastery, was universal. Under Nobunaga (1532—82), the relentless persecutor of the Buddhist bonzes, their power was in every way greatly curtailed, and the Jesuits then in Japan were greatly favored. The era of Hidéyoshi (Taiko) was brilliant and eminently favorable to learning and education, considerable stimulus being given by his enterprise and improvements tending to tranquilize the country. The invasion of Corea (1592—8) was followed by a new tide of influences, which, together with those received by contact with Europeans, gave fresh impulses to the intellectual life of the nation. The accession of Iyéyasu, in 1604, to the *shogunate*, the founding of the city of Yedo, the centralization of the feudal system and military power there, and most of all, the profound peace enjoyed for two centuries and a half, mark the period from 1604 to 1868, as the only one in which education in Japan has been general among all classes, and over nearly the entire empire. Next to the essentials or tools of an education—reading, writing, and reckoning on the abacus, the Chinese classics of Confucius and Mencius constitute the basis of culture. The very voluminous and—in the departments of history and classic fiction, at least,—valuable, native literature has also been largely studied. Before the opening of the country to foreigners, in 1854, it is probable that seven-tenths of the people could read and write. In most of the daimios' capitals were military, gymnastic, and literary training schools; and in Yedo, Kioto, and Mito (Ibaraki) were schools of great learning, or universities. In every city, town, village, or even hamlet, lived one or more teachers or writing-masters who kept private schools. Many of the bonzes also taught classes of lay youth, or neophytes, in the monasteries. Sanskrit and Chinese were the sacred languages of the Buddhist ritual, while the Yamato or ancient classic Japanese was used by the Shintoists. About the time of the *opium war* in China, an impulse was developed to study European literature and science through the medium of the Dutch language. A few Holland merchants living at Déshima, near Nagasaki, and the annual Dutch trading ships served Japan as a loop-hole whence to survey the world. It must be borne in mind that the policy of closing the ports of Japan, thereby secluding her from the world, was more a part of the Tokugawa usurpers' scheme of holding the actual power than the wish of the nation. After Perry's arrival, in 1853, the study of English superseded that of Dutch, and the tastes of the *samurai*, or educated armed classes, inclined them to favor modern science to the neglect of the Chinese. In 1868, a revolutionary storm, the elements of which had long been gathering, broke at the battle of Fushimi, when the duarchy, and the *shogunate* were overthrown, and the *tokugawa* were reduced to their proper place as vassals of the mikado, who was restored to supreme power, as before A.D. 1192. The seat of government also was removed to Yedo (bay-door), which was thereafter called Tokio (eastern capital). Enterprises were now organized on a national scale, among them the present system of education, the scheme of which was promulgated in 1872. According to this, the empire is divided into eight educational divisions, in each of which there is a university or *dai gakko*, with thirty-two middle schools, colleges or gymnasia; besides which there are two hundred and ten grammar schools, or academies, in the whole empire. In all these schools, foreign languages and the sciences are to be taught. The vernacular schools will number about 54,000, or about one for every six hundred of the population. According to the latest statistics, there are 30,000 public schools in operation, with very nearly 2,000,000 pupils, and 45,000 teachers. There are also seven normal schools, the principal one being in Tokio, with teachers in course of training from every province in the empire. Both sexes enjoy equal privileges of education, from the primary to the normal school. The department of education (*Mom Bu Sho*) is one of the ten ministries of the imperial government. The present head (1876) is Fujimaro Tanaka, the foreign adviser being Dr. David Murray, formerly of Rutgers College, New Brunswick, N. J. The universities and technical schools are under the direct control of the central government, while the public vernacular schools are under the care of the local or *ken* authorities. They are sustained in part by the central government, partly by special taxation in each *ken*, and partly by the contributions of the nobles, the rich, and the common people. Each of the 72 *kens* has a bureau of inspection, while examiners and supervisors are regularly sent out from Tokio, for the express purpose of keeping up and improving the standard of education. In addition to the schools under the Mom Bu Sho, nearly every government department has its special and technical schools. Medicine, law, and military, naval, engineering, agricultural, and optical science have each its schools, some of which are splendid colleges, well equipped with foreign instructors and apparatus. In elementary instruction, the Japanese have successfully introduced the kindergarten system and object teaching. The general plan and discipline of American schools prevail; and such appliances as tables and chairs, blackboards and chalk, slates and pencils, phonetic and ideographic charts, colored representations and solid models of objects, are used — all these being new ideas in Japanese pedagogics. The children learn to read and write the script and square *kana* syllabary, and are then taught the sound and sense of the most common Chinese characters. They also learn abacus reckoning, the use of the Arabic numerals, and our system of arithmetic. A large number of American and other elementary text-books have been translated, and the common-places of physical science are now taught to Japanese youth. The vernacular is also studied by the help of standard reading-books, grammar (a new thing), declamation, and the committing to memory of choice passages from the Japanese classics. The Chinese ethics still holds its place; but the moral ideas, sentiments, and narratives of Christendom seem to be radically influencing the rising mind of the nation. In the next grade of schools, foreign languages are begun, and Chinese writing and reading are continued. In the middle schools, the studies are wholly in English, or some other elected foreign language, the text-books being those used in America or Europe, while the course of studies common to an American high school or academy is gone through with. This period covers four years. In the *dai gakko*, or university, the full standard of which it is expected to reach in the future, the students are actually carried through the curriculum of the average American college, excepting in Latin and Greek, the place of these being filled by English and Chinese. At present, there is but one university in Japan the *Kai Sei Gakko*, in Tokio, which has a corps of about twenty American and English instructors, and 350 students, while the school of foreign languages of Tokio has double this number of pupils, all under foreign instructors. Nearly two hundred foreigners are employed in the educational service of Japan. Both students and native teachers, as a rule, wear the foreign costume; and, all over the empire, the general method of school order, discipline, equipment, and architecture approaches more closely to foreign models, year by year. Private schools are also very numerous, and exert a healthful spirit of rivalry with the government establishments. The newspaper press, publishers of books, and government issues of tracts of information on various subjects, also tend powerfully to elevate the intellectual status of the people. There are no educational journals in Japan, but the minister of public instruction issues a yearly report.—See Griffis, *The Mikado's Empire* (New York, 1876); *Education in Japan*, No. 2 of the Circulars of Information of the U. S. Bureau of Education (Washington, 1875); *An Outline History of Japanese Education*, prepared by the Japanese Dept. of Education (N. Y., 1876).

JEFFERSON COLLEGE, a Roman Catholic institution at St. James, La., under the management of the Marist Fathers, was chartered in 1861, and organized in 1864. It has good philosophical and chemical apparatus, and a library of 5,000 volumes. It has a collegiate course of 6 years, including preparatory studies; a commercial .course; and a preparatory, or primary, course. The regular charge for board, tuition, etc., is $300 a year. German, Spanish, drawing, and music are extras. In 1875—6, there were 12 instructors and 65 students. The Very Rev. J. B. Bigot, S. M., is (1876) the president.

JERSEY CITY, one of the chief cities in the state of New Jersey, embraces part of the ancient Dutch town of Bergen, from which it was set off by an act of the legislature, January 28., 1820, containing at that time less than 1,000 inhabitants. It has since been increased by the annexation of other municipalities, also parts of Bergen; so that its present territory reaches from the Hudson river westerly to the Hackensack river, a distance of nearly four miles, and from north to south, six miles. The population, according to the state census of 1875, was 116,883; and the number of children of school age, that is, between 5 and 18, was 38,068.

Educational History.— Probably, the first school of any kind that ever existed in New Jersey was located on the site of the school-house now known as School No. 11, in Bergen Square. It is remarkable that the first charter of Bergen, dated September 22., 1668, granted by Sir Philip Cartaret, governor of the then province of New Jersey, in the sixth article thereof, stipulated, "that all persons should contribute, according to their estates and proportions of land, *for the keeping of a free school for the education of youth.*" This stipulation was rigidly enforced, notwithstanding the objection and strong opposition, at various times, of certain persons of the baser sort, who groaned, both in body and spirit, when called on to pay a school tax The Dutch may thus claim equal praise with the Puritans of New England for making provision for the education of their children in the first organization of their towns. History has preserved the name of the first school-master. Engelbert Steenhuysen, a tailor by trade, came from Westphalia in 1659, was licensed as teacher in 1662, and taught for 250 florins a year, payable in sea stores. His school-house was built of logs.—The first board of education in Jersey City was organized in March, 1852. Previous to that time, the school (for there was but one) was managed by a committee of the board of aldermen. Joseph McCoy was the first superintendent, and held the office from 1852 to 1854, and afterward from 1862 till his death, in 1869. A. S. Jewell held the office from 1855 to 1862; A. H. Wallis, a part of 1862; and S. B. Bevans, a part of 1869 and 1870. Up to this time, the office of superintendent was an unsalaried one. Merchants and other business men held it, and were not expected to devote much time to its duties. E. O. Chapman was the first superintendent who received a salary. He held the office one year, from 1870 to 1871. Wm. L. Dickinson was chosen assistant superintendent in May, 1867, in which position he continued until 1871, when he was elected superintendent, which office he yet (1876) retains.—From the organization of the first board of education to 1871,—a period of nineteen years, the office of superintendent was filled annually by vote of the people at the charter elections; since that time, the duty of filling the office has devolved upon the board of education, and the term of office has been extended to three years.

School System.—The *school law* under which the schools are now managed, was enacted in 1873. It provides that the board of directors of education shall consist of twelve members, two from each aldermanic district, who shall hold office two years, one half going out every year. They have power, and it is their duty, to provide, for the free education of children in the city between the ages of 5 and 18, every thing necessary in their opinion, except the purchase of lands, the erection of buildings, and the making of repairs the cost of which shall exceed $500, the latter devolving upon the board of public works. The board of education is also empowered to expend annually $1,000, to establish and maintain a free library for the use of teachers etc., and to provide a normal school, high school, and evening schools.—The entire city is embraced in one district, known as District No. 13, Hudson Co. Parents are permitted to exercise their judgment in selecting a public school in any part of the city for the education of their children. There are four grades of schools: primary, grammar, high, and normal schools. There are 20 primary schools; 14 grammar schools; 1 high school; and 1 normal school (held on Saturdays). The 14 grammar schools have each a primary department which is counted as one of the primary schools. In all of the larger schools, the principal is relieved of the work of teaching a class, and is confined to that of supervision and the training of the younger and more inexperienced teachers. One city superintendent, holding office for three years, gives all of his time to the work of supervision.

There is no city school fund; but the state school fund yielded to the city, in 1874, $10,738. The two-mill tax collected by the state and assessed upon the property, but distributed to each school district in proportion to the number of children between the ages of 5 and 18, yielded $131,602.56. The balance was raised by special tax. Male principals of the grammar schools receive a uniform salary of $2,316; of female principals of primary and grammar departments the salary is $1,200. No male assistants are employed, except in the high schools. The salaries of female assistants vary, according to their positions, from $924 to $360. The *course of study* in the primary schools is divided into six grades, and embraces reading, spelling, elementary arithmetic (through the fundamental rules and U. S. money), geography, writing, and drawing. Object-teaching is prescribed for each grade. The course in the grammar schools is divided into five grades, and includes, besides advanced instruction in the same studies, English grammar, etymology, history and constitution of the United States, physical geography, algebra, natural philosophy, and elementary science, the latter in each grade. The course in the high school is divided into an English and a classical course, each extending over three years.

School Statistics.—The following items are reported for the year 1875:

Number of pupils enrolled		18,737
Average register number		10.678
Average attendance		9.583
Number of teachers, males	16	
" " " females	247	
Total		263
Number of pupils per teacher, primary schools		56
" " " " grammar "		36
Expenditures:		
Salaries	$210,361.53	
Rents	2,200.00	
Books and stationery	13,133.61	
Repairs and furniture	10,613.64	
Fuel and incid. expenses	26,001.59	
Total		$262,310.37

Besides the public schools, there are but few others of any great importance, with the exception of the denominational schools supported by the Roman Catholics. These schools are largely attended.

JESUITS, or the Society of Jesus, a celebrated religious order of the Catholic Church. It was founded by Ignatius Loyola in the beginning of the 16th century, and spread with great rapidity over the entire Christian world. It obtained an influence unparalleled in the history of religious orders and, perhaps, in the history of societies of any kind. It was abolished, in 1773, by Pope Clement XIV., but restored, in 1814, by Pope Pius VII, and has since then borne the brunt of battle in the severe conflict which has been raging between the Catholic Church and many of the present state governments, both Catholic and Protestant. The Jesuits regarded it as a special mission of their society to arrest the progress of the Reformation, and to regain for the church as much of the lost ground as possible. In order to fulfill this mission, they endeavored to obtain control of the instruction of the rising generation. Their efforts to establish well-patronized, well-attended, and influential schools, met with complete success; and though the opinions which have been expressed of the merits of the schools of the Jesuits greatly vary, according to the sympathy or dislike of writers in regard to the order, the powerful influence which the Jesuits, through their schools, have exerted upon the history of many countries is admitted by all. In order to appreciate justly the educational principles of the Jesuits, it may be well to notice, first, the plan according to which the members of the order were, and still are, trained themselves as teachers. The candidates for the priesthood are, during the two first years, *novitii scholastici;* then, by binding themselves to the order by means of simple vows, they become *scholastici approbati.* Devoting themselves, for several years, to classical and philosophical studies, they are, for some time, employed as teachers and educators in the colleges, until they begin the study of theology, which lasts for four years. As all the members were thus trained as practical teachers, the order was, soon after its foundation, enabled wherever a favorable opportunity offered, to call into existence an astonishing number of literary institutions.

All the educational institutions of the Jesuits are governed in accordance with the official course of instruction entitled *ratio et institutio studiorum societatis Jesu*, and well known in history under the shorter name *ratio studiorum.* It was drawn up under the direction of the fifth general of the order, Acquaviva, who, immediately after his election, in 1581, was commissioned by the 4th General Congregation to appoint for this purpose a committee of six fathers. In 1584, the committee in which Spain, Portugal, France, Austria, Germany, and Rome were represented, were presented to the Pope. Their work was revised by another committee of twelve members, subsequently submitted for revision and approbation to the 5th and 6th General Congregations and to the Pope, and finally printed in 1599, in the printing office of the *Collegium Romanum.* A new edition, with additions sanctioned by the 7th General Congregation, appeared in Rome in 1616. After the restoration of the order, the 20th General Congregation, held in 1820, and the 21st, held in 1829, recommended a revision of the course of studies; and the general of the order, Father Roothan, appointed, therefore, in 1830 a committee of five fathers, representing the five provinces of the order.—Italy, Sicily, France, Germany, and Spain. In 1831, the revised course, after having received the approbation of the general and his assistants, was sent to all the members of the order. The changes made in the old course chiefly relate to theology, philosophy, oriental languages, mathematics, and physics. Instruction in theology and philosophy is not to be based, to the same extent as before, on Thomas Aquinas and Aristotle; and, in mathematics and the natural sciences, proper attention is to be given to the recent progress made in those branches. In the lower classes of their institutions, new provisions are made for learning modern languages, both the vernacular and foreign, and for the study of history. The course of studies is divided into twenty sections, and embraces rules for the provincial, the rector, the prefects of studies, the professors, the scholastics, and the students. The general of this order is the supreme head of all its schools and educational institutions; he superintends all of them, and he alone authorizes the establishment of new ones. When, in the present century, the government of Austria transferred to the Society of Jesus several gymnasia and the theological faculty of one of the state universities (Innspruck), the general of the order, Father Beckx, explicitly insisted that the superiors of the order must be at full liberty "to appoint members of the order, without a previous examination by state boards, directors, rectors, prefects of studies, and professors, and to remove them and appoint others in their stead, as he may deem best in the sight of God." The head of a province of the order is called a "provincial"; and the first section of the *ratio studiorum* recommends to him the care of the schools, the appointment of competent prefects of studies and professors, and the enforcement of a strict observance of the entire course of studies. At the head of single houses or colleges, is the "rector," who does not give instruction himself, but is generally chosen from among the older teachers. He is appointed for a term of three years by the general or his representative; and, after this time, is frequently transferred to another college. He appoints one or two prefects of studies, and all must obey and revere him as the representative of Jesus Christ. A college of the first class must, as a rule, have 20 teachers or "regents"; a college of the second class, 30; a college of the third class, or a university, at least 70. Small institutions which have not a sufficient number of teachers must be dissolved. With the colleges, there are generally connected *convictoria alumnorum* (boarding-houses), in which students of the college receive lodging, board, and strict superintendence by a member of the order, or seminaries for educating young candidates for the priesthood or knights' academies, for the exclusive education of the sons of nobles. Day scholars who do not live in any of the institutions, have to promise obedience to the rector and the rules, and they are, from time to time, visited by the prefect of studies in their houses.

The schools of the Jesuits are divided into higher and lower classes. The former are under the supervision of a *prœfectus generalis*, or *prœfectus studiorum superiorum;* the latter, under that of a *prœfectus studiorum inferiorum.* The smaller colleges have only the lower classes, and, therefore, only one prefect. The *studia inferiora* embrace five classes: (1) *Infima*, also called "the rudiment"; (2) *Secunda*, or *media classis grammaticœ*, also called "grammar"; (3) *Tertia*, or *suprema classis grammaticœ*, also called "syntax"; (4) *Quarta—poetica*, or *humanitas*, (5) *Quinta—rhetorica.* The three lower are designated as the three grammar, and the two higher as the two humanity classes. In smaller schools, two classes are sometimes united into one; in larger schools, parallel classes are formed. Considerable prominence is given, in all the classes, to the study of the Latin language. As much as practicable, Latin is made the medium of instruction; and it is intended to give to the pupils such a knowledge of the language as will enable them to speak and write it. Father Beckx, the general of the order, says on this subject, in his correspondence with the Austrian minister of public instruction: "Because the Latin language is the language of the church, and the language of Christian tradition, and because in this language the literary treasures of all times and nations have been deposited, and because it has been for centuries developed beyond any other language, as the medium of faith and of science, the Society of Jesus has a special predilection for this language, and uses it as medium of instruction in its schools." It is expressly stated that it is not intended to imbue the minds of the pupils with the spirit of classic antiquity, and most of the Latin authors used in the schools of the Jesuits are read in expurgated editions.—The study of the Greek language begins simultaneously with the Latin, though much less time and attention are given to it.—Instruction in the vernacular language was incorporated with the course of instruction by order of the 14th General Congregation, in 1703; and, in 1756, the colleges in Germany were advised to devote as much attention to German as to Latin and Greek.—To instruction in religion, less time is devoted than in most other schools conducted by religious orders, the Jesuits being of opinion that the religious education of their pupils will be more promoted by religious exercises than by theoretical instruction.—In the two higher classes oratorical exercises and exercises in composition receive special attention.—The other subjects of instruction were originally comprised under the collective name of *eruditio*, and it was recommended to use specially the hours of recreation, and the weekly holiday for the purpose of acquainting the pupils with the elementary and most interesting parts of the studies.—The *studia superiora* comprise a two years' course of philosophy and a four years' course of theology.

The management of the schools of the Jesuits is based on the fundamental principle that education and instruction should be most intimately connected, and that the education of the pupils is by far the most important aim of a school. They favor the class teaching system; for not only does the class teacher teach all or most of the subjects of instruction in his class, but he takes his pupils through several or all of the classes. They deem it an important condition of the success of the teacher that he should thoroughly know the character of each pupil; and this, they contend, is only possible in the class-teaching system. They believe that great care should be taken not to crowd the pupils, either in the number of subjects or the amount of time given to study; and they object to the courses of instruction adopted in most modern colleges and gymnasia, as attempting too much. They prefer short lessons, and are specially anxious to make learning and reciting as attractive to the pupils as possible. Great stress is laid on thorough memorizing, and on frequent reviews and disputations. The last day of every week and the latter part of every month and of every half-year are regularly devoted to a review of the work accomplished during this period. As the chief incentive to diligence, they encourage emulation, which they endeavor to stimulate by the distribution of prizes, by "concertations" (disputations or literary contests), and by the promotion of the best students to a variety of honorary titles, which are taken from the Greek and Roman republics (*pretors, censors, decurions, etc.*). It is made the duty of the teacher to control his pupils by means of praise and encouragement rather than by punishment. Corporal punishment is to be employed only in extreme cases, and not by any member of the order, but by a "corrector" appointed for the purpose.

The influence of the Jesuits upon education in Catholic countries has been very great. Each one of these countries, at one time or other, has had flourishing colleges of the Jesuits, in which, in particular, a large number of the children of the nobility and of other prominent persons were educated. How large a share of the order's activity was given to instruction, may be inferred from the fact that, in 1749, the order had only 24 professed houses, but 669 colleges and 176 seminaries. Even their missionaries in pagan countries were always anxious to obtain, as soon as possible, control of the education of the rising generation, by the establishment of colleges. Thus, the Portuguese Jesuits had, in 1613, in Japan two colleges; and in China, Father Ricci established a reputation as one of the best scholars. Their educational labors were chiefly limited to schools of a higher grade: but, in the most celebrated of their missions, Paraguay (q. v.), all the youth were, for some time, under the sole educational control of the Jesuits. Though founded for combating Protestantism, they gained, as teachers, the admiration of many of the Protestant princes. Thus, Frederick the Great, of Prussia, permitted them, after the abolition of their order, to continue as an organized society, under the name of "priests of the royal school institute." In the 19th century, the communities of the Jesuits, inclusive of their schools, were suppressed, on the charge of being dangerous to the interests of the state, in Portugal, Spain, Italy, Switzerland, the German Empire, and Russia; and they were, in 1876, threatened with suppression in Austria-Hungary. They have also been expelled from Mexico, the United States of Colombia, and a number of other South American states. They, however, still have a number of colleges in France, the Netherlands, Belgium, Great Britain, and the Austro-Hungarian Monarchy. The Jesuits accompanied Lord Baltimore to Maryland, and were the first instructors of the Catholic settlers of that province. They continued to live in a community after the abolition of their order, and grew rapidly after its restoration. Their colleges, in 1876, were as follows: Boston College, South Boston, and College of the Holy Cross, Worcester, Mass.; College of St. Francis Xavier, New York; St. John's College, New York (Fordham); St. Joseph's, Philadelphia; St. John's, Frederick, Md.; Loyola, Baltimore; Gonzaga, Washington, D. C.; Georgetown, D. C.; Spring Hill, near Mobile, Ala.; St. Louis University, St. Louis, Mo.; College of the Immaculate Conception, New Orleans; St. Charles, Grand Coteau, La.; St. Joseph's, Bardstown, Ky.; St. Xavier's, Cincinnati; St. Ignatius College, San Francisco; and Santa Clara College, Cal. In Canada, the Jesuits conduct St. Mary's College, Montreal, founded in 1848. — Among the admirers of the schools of the Jesuits were Lord Bacon, Descartes, and Châteaubriand. Says Bacon: "As it regards teaching, this is the sum of all direction: take example by the schools of the Jesuits, for better do not exist. When I look at the diligence, and the activity of the Jesuits, both in imparting knowledge and in moulding the heart, I bethink me of the exclamation of Agesilaus concerning Pharnabazus: 'Since thou art so noble, I would thou wert on our side.'" Ranke, in the *History of the Popes* (vol. I.), makes the following remarks on the educational system of the Jesuits: "The Jesuits were more systematic than the former teachers; they divided their pupils into classes. Their instruction carried the pupils in the same spirit from the first elements to the highest stage. They also supervised the morals, and educated well-bred gentlemen. They were favored by the political power. Finally, they imparted their instruction gratuitously. This could not but be of immense advantage to them, especially as their results were really as great as their zeal. The Jesuits were learned, and, in their way, pious; but no one will say that their science was based on a free soaring of the mind, or that their piety proceeded from the depth and the ingenuity of a simple mind. They are sufficiently learned to awaken confidence, to obtain reputation, to educate and retain scholars; they aim at nothing further. Neither their piety nor their teaching enters upon free and untrodden roads; but it has something which characterizes it; it has method. Every thing is calculated, for every thing has a special aim. They were diligent and fantastic, full of wisdom and enthusiasm, respectable people whom one likes to approach; without personal interest, one aiding the other. No wonder that they succeeded." Among the most important works on the history of the Jesuits are: CRÉTINEAU-JOLI (friendly to the order), *Histoire religieuse, politique et littéraire de la compagnie de Jésus* (6 vols., 1844—6); GIOBERTI (adverse to the Jesuits), *Il Gesuita Moderno* (5 vols., 1847); STEINMETZ, *History of the Jesuits* (3 vols., 1848); HUBER (Old Catholic), *Der Jesuitenorden* (1873). A special work on the *Ratio studiorum* is, *Der Societät Jesu Lehr- und Erziehungsplan* (3 vols., Landshut, 1833—6, friendly to the order). See also *The Jesuits and their Schools*, in BARNARD'S *German Teachers and Educators* (a condensed translation from RAUMER'S *Geschichte der Pädagogik*); and WEICKER, *Das Schulwesen der Jesuiten nach den Quellen dargestellt.*

JOHNS HOPKINS UNIVERSITY, at Baltimore, Md., was founded in 1874. It is named in honor of the late Johns Hopkins of Baltimore, who bequeathed a fund of $3,000,000 for its endowment and a beautiful estate of 330 acres at Clifton, near the city limits, for its permanent site. The temporary location is within the city. Daniel C. Gilman was appointed the first president; and the department of philosophy was opened Oct. 3., 1876. The plan includes a medical department and a law department. The university contemplates "a combination of lectures, recitations, laboratory practice, field work, and private instruction." The system adopted "involves freedom of methods to be employed by the instructors on the one hand, and on the other, freedom of courses to be selected by the students," while it is "intended that the pupils shall have been matured by the long preparaatory discipline of superior teachers, and by the systematic, laborious, and persistent pursuit of fundamental knowledge." Ten fellowships, or graduate scholarships, were opened in 1876, each yielding $500 a year and renewable, to be bestowed for excellence in the following subjects: philology, literature, history, ethics and metaphysics, political science, mathematics, engineering, physics, chemistry, and natural history. So many advanced students (152) presenting themselves as applicants, twenty fellowships were bestowed upon graduates of various colleges.

JUDGMENT, Training of. This department of intellectual culture needs no special attention, if the whole educational system, in other respects, is judicious and rational; *i. e.*, adapted to the individual both as to age (degree of maturity) and peculiarities of character or endowment. Where this is not the case, an efficient corrective may be applied by bringing into exercise the pupil's mental faculties in various ways and in connection with various subjects. The departure must be taken from the sphere of the pupil's experience; he must be led (1) to an accurate observation of particulars — minute details; (2) to their collation, as preliminary to generalization; and (3) to their classification under appropriate heads. When general principles or rules have been established in the pupil's mind in this way, his judgment will be brought into play in the application of the principle or rule to particular objects or facts. Thus, in natural history, after the pupil has learned the characteristics of genera and species by a minute and accurate observation of individual specimens, he cannot, without an exercise of judgment, determine whether any particular specimen, previously unobserved, belongs to one or the other genus or species. He must have a clear conception of the distinguishing qualities, both of the individual and of the class, in order to determine whether the correspondence exists or not. As regards concrete objects, the judgment is exercised at a very early age, and is constantly trained more or less by every legitimate process of intellectual education; but as regards abstract truths, this faculty is one of the last to attain a full or mature development. Accuracy in judging depends very much on the mental habits formed during the period of early education, Habits of attention, careful observation, dispassionate, conscientious reasoning, and a profound and earnest love of truth, will qualify any person for the exercise of a sound judgment in regard to any subject of study or investigation. A mental character based upon such habits will be free from prejudice, and will readily learn to eliminate all passion from its intellectual processes; and, hence, its judgments being solely based upon the facts acquired, will be correct or the contrary, in proportion to the accuracy and extent of the information possessed.

KALAMAZOO COLLEGE, at Kalamazoo, Mich., under the control of the Baptists, was founded in 1855. It admits both sexes, and is supported by tuition fees ($18 per year), and the income of an endowment of $80,000. It has a library of 2,500 volumes, chemical and philosophical apparatus, and cabinets of natural history. There is a preparatory and a collegiate department, with three courses; namely, (1) Classical, including Greek and Latin; (2) Latin and scientific (without Greek); (3) Scientific (without Greek and Latin). Facilities are afforded for instruction in music and art. In 1874—5, there were 11 instructors (3 females), and 174 students (108 males and 66 females), of whom 27 were of the collegiate grade. The presidents have been as follows: the Rev. James A. B. Stone, D.D., 1855—64; John M. Gregory, LL. D., 1864—7; and the Rev. Kendall Brooks, D. D., the present incumbent (1876), appointed in 1868.

KANSAS, originally a part of the Louisiana purchase of 1803, was organized as a separate territory by an act of Congress passed in May, 1854. It was admitted into the Union in 1861. Its area is 81,318 sq. m., and its population, according to the census of 1870, was 364,399, of whom 17,108 were colored, and 914 Indians. The state census of 1873 showed a gain of 67.63 per cent, the total population of the state at that time being 610,863. Of the male adults 8.42 per cent were illiterate; and of the female adults, 13.2 per cent.

Educational History.—By the provisions of the constitution ratified in 1859, the legislature was required to "encourage the promotion of intellectual, moral, scientific, and agricultural improvement, by establishing a uniform system of common schools, and schools of higher grade, embracing normal, preparatory, collegiate, and university departments." It also provided for the appointment of a state superintendent, county superintendents, and a state board of commissioners. Sections of land in every township had been, as in the case of other new states, set apart for common-school purposes, and seventy-two sections were reserved for the maintenance of a state university. School laws have been passed, with modified provisions, from time to time by successive legislatures. A compulsory education law was enacted in 1874.

School System.—The educational interests of the state are committed to (1) a superintendent of public instruction, elected for two years; (2) a state board of education, consisting of the principals of the normal schools, the president of the state university and of the agricultural college; which body meets annually, and issues to teachers, upon examination, diplomas for life or certificates for three or five years; (3) a state board of commissioners, composed of the state superintendent, the secretary of state, and the attorney general, for the management of the permanent school and university funds; and

(4) county superintendents, elected for two years, whose duty it is to apportion the school moneys, to visit schools, and to hold teachers' institutes. These institutes are also required to be held annually by the superintendent of public instruction, in the several judicial districts of the state. The schools must be kept open six hours per day for at least three months, the school month consisting of four weeks of five days each. The school age is from 5 to 21 years. By the act of August, 1874, parents are compelled to send healthy children to public or private schools not less than twelve weeks every year, under the penalty of a fine of from $5 to $10 for the first offense, and from $10 to $20 for every subsequent offense. School directors are charged with the enforcement of this law.—The *school revenue* is derived from (1) the proceeds of all lands granted by Congress to the state for the support of schools, including the 500,000 acres granted to each new state in 1841; (2) all estates of persons dying intestate and without heirs; and (3) money derived from military exemptions, fines, and estrays. The amount of interest-bearing permanent school fund, in 1875, according to the report of the state superintendent, for that year, was $1,163,534.09. The income from all sources for the support of schools, amounted to $1,478,998.64, including $264,683.30 from state funds, and $685,162.27 from district taxes.—The *salaries* of teachers are as follows: average monthly salary of male teachers, $33.98; of female teachers, $27.25.—The *course of instruction* according to the law of 1874, includes orthography, reading, writing, English grammar, arithmetic, and such other branches as may be prescribed by the district board.

Educational Condition.—The total number of school-districts in the state is 4,560; and the number of school-houses, 3,715. According to the report of 1875, the number of persons of school age was 199,986; of whom 103,551 were males, and 96,435 females. The following are additional items of *school statistics*:

Number of pupils enrolled		142,606
Average daily attendance		85,580
Number of teachers, males	2,448	
" " " females	2,935	
Total		5,383
Receipts		$1,478,998.64
Expenditures, for salaries, repairs, etc.		$1,235,969.72

Normal Instruction.—There are three state normal schools for the training of teachers. The first was organized at Emporia in 1865. This affords a two years' and a four years' course of study in the normal department, and has, besides, a model department, consisting of a high-school and grammar department, and an elementary training school. The enrollment, in 1875, was 302: in the normal department, 77; high school, 8; training and preparatory school, 217. The second normal school is at Leavenworth and was organized in 1870. This comprises a normal department, which affords a thorough knowledge of all the subjects taught in the public schools of the state, and a model school, in which the art of teaching is practiced. The model school comprises thirteen grades or departments, and, in 1875, the total enrollment was 836; and the number of teachers, 12. In the normal department, the enrollment was 420; and the number of teachers, 7; the average attendance was about 250. This department includes two kinds of classes: the regular classes of the normal course, and the temporary classes of the institute course. The former study in detail all that pertains to professional training; the latter give their attention to all the ordinary common-school subjects, with only enough detail to illustrate methods. There are five of these short courses in a school year. The normal students teach in the grades of the city schools. The third normal school, organized in 1874, is located at Concordia. The school edifice is a fine stone structure, capable of accomodating 300 students. The enrollment, in 1875, was, in the normal-department, 171; in the training school, 83; total, 254.

Secondary Instruction.—In 1873, the regents of the university authorized the preparation of a course of study for the high schools of the state, for the purpose of introducing uniformity into the school system. With this view a classification was adopted which assigned to the high schools an intermediate position between the graded schools on the one hand, and the state university and agricultural college on the other. Three courses, each of four years, were arranged.—a classical, a scientific, and an English course. The choice as to which shall be pursued, is optional with the student. There are 66 graded schools in the state which have, connected with them, high school courses, attended by 1,066 pupils. There are two business colleges, which were reported, in 1874, to have 4 instructors and 179 students, 140 of the latter being males, and 39 females. The principal *denominational schools* of this grade are (1) St. Benedict's College (Roman Catholic), at Atchison, with 7 instructors and 110 students; (2) the college of the Sisters of Bethany (Episcopal), at Topeka, with a primary, a preparatory, and a collegiate department: (3) Mt. St. Mary's Female Academy (Roman Catholic), conducted by the Sisters of Charity, with 7 instructors and 26 pupils; (4) the Geneva Academy (Presbyterian) with 2 instructors and 100 pupils; (5) the Western Methodist Collegiate Institute, at Hartford; (6) Washburn College (Congregational), at Topeka.

Superior Instruction.—Of the institutions which afford instruction of this grade, the only one under the direct management of the state is the University of Kansas (q. v.), at Lawrence. Others are included in the following table:

NAME	Location	When founded	Religious denomination
Baker University	Baldwin City	1857	M. Epis.
Highland University	Highland	1857	Presb.
Lane University	Lecompton	1865	U. Breth.
St. Benedict's College	Atchison	1859	R. C.
St. Mary's College	St. Mary's	1869	R. C.
Washburn College	Topeka	1865	Cong.

Professional and Scientific Instruction.—The Kansas Agricultural College, at Manhattan, is designed, as its name implies, to afford instruction in agriculture; and, to that end, it has a large farm of over 400 acres, by means of which the students are enabled to put to a practical test the theoretical knowledge acquired. This farm has been divided into orchards for pears, apples, etc., plots for the cultivation of grains and grasses, and the raising of root-crops, as on an actual farm. Besides this farm and the course connected with it, there are departments for the teaching of sewing, printing, and telegraphy. The literary departments of the college include a farmers', a mechanics', and a commercial course, besides special instruction for women. It is claimed that the full curriculum carries the graduates up to the point reached by the best colleges. The endowment of the institution was derived from the sale of the congressional grant of land (90,000 acres), yielding, in ordinary years, an income of about $20,000, which it is expected will, before many years, be doubled. The attendance of students at the college, during the year 1874, was 208, of whom 139 were males, and 69 females.

Special Instruction.—The Kansas Institution for the Instruction of the Blind is organized with a superintendent, matron, physician, and four teachers, and receives pupils from 9 to 21 years of age. It is expected that, before admission, students shall have previously received sufficient elementary instruction to enable them to go on with the course pursued in the institution; and, on this condition, they are received without charge, except for clothing, traveling, and incidental expenses.

KANSAS, University of, at Lawrence, Kansas, was chartered in 1864. It is supported by state appropriations, the income of a fund of $10,500, and by contingent fees of $10 per annum, the only charge made by the university. The institution owns 72 sections of land granted to the state by Congress, in 1861, for the support of a state university. The grounds comprise 50 acres on Mount Oriad, donated by citizens of Lawrence and its vicinity. There are two buildings, erected partly by the city and partly by the state. The university has chemical and philosophical apparatus, libraries containing about 2,500 volumes, and a cabinet of natural history. Both sexes are admitted. The charter provides that the university shall consist of six departments: (1) Science, Literature, and the Arts; (2) Law; (3) Medicine; (4) Theory and Practice of Elementary Instruction; (5) Agriculture; (6) The Normal Department. Of these several departments,— Science, Literature, and the Arts, and the Normal Department, are the only ones yet organized. These departments, at present, comprise seven courses of instruction; namely, a classical and a modern literature course, each leading to the degree of Bachelor of Arts; a general scientific course, and three special scientific courses,—one in chemistry, one in natural history, and one in civil and topographical engineering—each of the four scientific courses leading to the degree of Bachelor of Science. A three years' preparatory course precedes a four years' course in each of these departments. A normal course was added in April, 1876. In 1875—6, there were 10 instructors and 237 students (72 collegiate, 35 normal, and 130 preparatory), of whom 117 were males and 120 females. The presidents of the university have been as follows: the Rev. R. W. Oliver, D. D., 1865—8; Rev. John Fraser, A. M., 1868—74; and the Rev. James Marvin, D. D., the present incumbent (1876), appointed in 1874.

KANT, Immanuel, one of the most illustrious of philosophers, was born April 22., 1724, at Königsberg, where he died Febr. 12., 1804. After having been for nine years a tutor, he became in 1755, *privat-docent*, and, in 1770, professor, in the philosophical faculty of the university of Königsberg. The latter position he retained until his death. The philosophical system of Kant, which marks one of the great turning-points in the history of philosophy, is designated by the name of *critical philosophy*, or *criticism*, because he was the first who, by a keen analysis and criticism of our power of cognition, endeavored to fix a distinct boundary line between that which is essential and generally valid in our cognition on the one hand, and that which is empirical, non-essential, and accidental, on the other. The chief tenets of his system are the following: (1) that we know things not in their essence, but in their external appearance; (2) that there are in the human mind, *a priori*, elements of transcendental knowledge, but that this transcendental knowledge does not attain, with absolute certainty, to the nature of things; (3) that God, freedom, and immortality are postulates of practical reason; (4) that the moral law is a *categorical imperative*. The principal works of Kant, which are still reckoned among the classic productions of philosophical literature, are, *Kritik der reinen Vernunft* (1781); *Kritik der praktischen Vernunft* (1788); *Kritik der Urtheilskraft* (1790); *Die Religion innerhalb der Gränzen der blossen Vernunft* (1793); *Anthropologie in pragmatischer Hinsicht* (1798).—As professor of philosophy, Kant was required to deliver, alternately with the other professors of the same subject, lectures on pedagogy. The notes which he prepared for these lectures, were, in the latter part of his life, revised and arranged by his pupil Rink, who, in 1803, published them under the title, *Immanuel Kant über Pädagogik*. Kant regarded education as the highest and most difficult task which can be assigned to man. He, therefore, insisted that pedagogics should be made the subject of earnest study, that education should be freed from mechanism, and be elevated to an art guided by science. Children must not be educated, in accordance with mere custom, for the world, as it now exists, but, in harmony with the idea of humanity, for a better condition of society in the future. The plan of education should not be narrow and restricted, but cosmopolitan. The development of man for the fulfillment of the manifold laws of his existence is regarded by Kant as the proper object of education. He lays particular stress upon practical morality, and requires that the teaching of religious doctrines should be preceded by a thorough course of instruction in the principles of morality, which should be derived from reason. The work of God (conscience, moral law, and reason) must be known, before God himself can be known. — Kant was a great admirer of the pedagogical views of Montaigne and Rousseau, and took an earnest interest in the career of the *philanthropin*. He has exerted considerable influence upon the development of German pedagogics; as is evident from the fact that a number of the most devoted believers in his philosophical views distinguished themselves as educational writers; among whom may be mentioned Niemeyer, Schwarz, and Rosenkranz; and even Herbart was greatly influenced by Kant. — Editions of the complete works of Kant have been published by HARTENSTEIN (10 vols., 1838—9; 2d edit., 8 vols., 1867—9), by SCHUBERT and ROSENKRANZ (11 vols., 1840—42, with a biography by Schubert), and KIRCHMANN (Berlin, 1868—74). A good English translation of the *Critique of Pure Reason* has been published by J. M. D. MEIKLEJOHN (in Bohn's *Philosophical Library*, 1855). Recent works of value to English students are MAHAFFY, *Kant's Critical Philosophy for English Readers* (London, 1871, et seq.); ABBOTT's *Kant's Theory of Ethics* (London, 1873); and MONCK's *Introduction to the Critical Philosophy* (Dublin, 1874). A new edition of Rink's pamphlet, *Immanuel Kant über Pädagogik*, with select passages from the other works of Kant, relating to educational topics, has been published by Willmann (as the 10th vol. of RICHTER's *Pädagogische Bibliothek*).

KENTUCKY, one of the interior states of the American Union, was originally a part of the state of Virginia, but was set off from it as a separate territory in 1790, and admitted into the Union in 1792, as the second state after the original thirteen. Its population, at that time, was about 75,000; but, in 1800, it was reported as 220,595. Its area is 37,680 sq. m., and its population, in 1870, was 1,321,011, its rank in the latter respect being the eighth.

Educational History.—The first step taken by this state in the interest of education, after its admission into the Union, was in 1798, when, by act of the legislature, 6,000 acres of the public lands of the state were given to each of the following institutions: Franklin, Salem, and Kentucky academies, and Lexington and Jefferson seminaries. In 1805 and 1808, acts were passed extending these provisions to all the counties of the state then existing. Within twenty years after the passage of the act of 1798, forty-six additional institutions were endowed by a similar grant of 6,000 acres. Another law provided that, in addition to this, a large tract of public land, specified by the act, should be set apart for educational purposes; and the county courts were authorized to cause to be surveyed, located, and patented, within their respective counties, the reserve above indicated, or elsewhere in the state, 6,000 acres each for seminary purposes, such lands to be exempt from taxation. Through inattention or interested legislation, however, the land was, in many cases, sold by the county authorities, and the proceeds were squandered; in others, the funds are still held for their original uses by trustees. On the 18th of December, 1821, one-half of the net profits of the Bank of the Commonwealth were, by act of the legislature, set apart as a Literary Fund, to be distributed, *pro rata*, to the counties of the state, for the support of a general system of education, under state direction; and one-half of the net profits of the branch banks at Lexington, Danville, and Bowling Green were, in a similar way, given to Transylvania University, Centre College, and the Southern College of Kentucky, respectively. Until the failure of the bank, this last appropriation yielded about $60,000 annually. In 1836, Congress apportioned $15,000,000, surplus funds in the treasury, to the older states, with the understanding that it was to be devoted to educational purposes. Of this amount, Kentucky's share was $1,433,757. As no condition was imposed, however, that it should be used as an educational fund, only $1,000,000 of it was set apart for that purpose; and this was afterwards reduced to $850,000. This was the origin of the permanently invested school fund of the state, and the interest of it was for many years the only constant revenue for the support of the public schools. In 1838, the first law for the establishment of a general system of common schools was enacted; but for ten years little was done to make it effective; and, in 1840, the state having entered upon a system of costly internal improvements by which a deficit in the treasury was caused, the payment of interest on the school bonds was refused. This was followed by the calling in and burning of all the school bonds. In 1847—8, however, an act was passed, chiefly through the efforts of Rev. Robert J. Breckinridge, directing the governor to issue a new bond for all arrears of interest due, and submitting to a vote of the people a proposition to levy a tax of two cents on each one hundred dollars, for common-school purposes. The election showed a majority of 36,882 votes in favor of this tax. In 1849, upon the framing of a new constitution for the state, the school funds, for which the state had given bonds to the state board of education, were forever dedicated to common-school purposes, together with all other funds which might thereafter be raised for the same purpose. During the legislative session of 1850—51, a fierce contest arose between the governor (John L. Helm) and the state superintendent (Rev. Dr. Breckinridge) as to whether the common-school fund should be considered a part of the regular state debt, the interest of which was payable out of the sinking fund. Dr. Breckinridge considered that it should be so paid, and the adoption of this method was of vital moment to the popularity of the public-school system, since, if it were not so paid, a special annual tax of $80,000 would be necessary. After a long and heated discussion, a bill directing the commissioners of the sinking fund to pay the interest of the school bonds was passed; but it was vetoed by the governor. It was, however, immediately repassed over his veto, by a large vote. In 1855, the school tax was increased from two to five cents on the hundred dollars, by a majority of 57,980 votes out of 109,492 cast. From that time till 1867, little change was made in the common-school system of the state. In the latter year, the state superintendent, Z. F. Smith, prepared a plan which contemplated an entire reorganization of the system. His proposition to increase the school tax from five to twenty cents on the hundred dollars, to add a poll tax of one or two dollars, and to empower the people of any county, district, town, or city to vote an additional local tax of thirty cents on the hundred dollars, for school purposes, was accepted by the legislature, and carried by a large popular majority. His plan for the reconstruction of the schools, though greatly modified, was substantially embodied in the law enacted, and resulted in giving a fresh impetus to the cause of education. In 1873, the present school laws went into effect, and the beneficial results of their operation are looked for with very great confidence. In 1874, an act was passed for the establishment of a uniform school system for the education of colored children, to be under the supervision of the superintendent of public instruction and the state board of education. This act provides that all taxes collected from colored people shall go to the support of colored schools.—The *State Superintendents* have been as follows: Joseph J. Bullock, D. D., 1837—9; Hubbard H. Kavanaugh. D. D., 1839—40; Benjamin B. Smith, D. D., 1840—42; George W. Brush, 1842—3; Ryland T. Dillard, D. D., 1843—7; Robert J. Breckinridge, D. D., LL. D., 1847—53; John D. Mathews, D. D., 1853—9; Robert Richardson, A. M., 1859—63; Daniel Stevenson, D. D., 1863—7; Zach. F. Smith, 1867—71; Howard A. M. Henderson, D. D., elected in 1871.

School System.—The general supervision and control of the educational interests of the state are intrusted to a *state board of education*, which consists of the secretary of state, attorney general, superintendent of public instruction, and two professional educators. The last three constitute a standing committee for the preparation of rules, by-laws, and regulations for the government of the schools, and for the recommendation of a proper course of study and suitable text-books—the latter to be adopted at the discretion of the county board of examiners. The executive officer of the board is the *superintendent of public instruction* who is elected for four years, and whose duty it is to exercise a general supervision over the schools of the state, to distribute annually through the state the school laws, to furnish blanks for reports, certificates, etc., and to perform all other duties naturally devolving upon the office of superintendent. The school year is five months, of twenty-two days each; and the required age of pupils is from 6 to 20 years. No books, tracts, paper, catechisms, or publications of a sectarian character are permitted to be used in the schools in any way.—The *state board of examiners* consists of the state superintendent and two practical educators appointed by him. Their sessions are held in July of each year for the examination of teachers applying for certificates. These certificates, for each of which the examiners are allowed to charge three dollars, entitle the recipients to teach five years in any of the common schools, without re-examination by county boards.—The *county commissioners* are elected for two years by the county judges and justices of the peace, their functions corresponding to those of county superintendents of other states.—The *county board of examiners* consists of the county commissioner and two competent persons appointed by him. They examine teachers, grant certificates, and select a uniform series of text-books, to be in use two years.

Educational Condition.—Concerning the number of school-districts, schools, etc., advices from counties and districts are so imperfectly made up that entirely accurate statistics cannot be obtained. In the annual report of the state superintendent for the year ending June, 1874, an approximate result is given as follows: number of school-districts, 4,035; districts in which common schools are taught, 3,983; common-school houses, 3,118; private schools, 463; academies, 53; colleges, 25. The number of male teachers in the common schools was 2,756; of female teachers, 1,017; average attendance of pupils, 114,603.

Normal Instruction.—There is an incorporated normal school at Carlisle under private control; but those who graduate from the course provided for teachers have the right, under the charter, to teach in the common schools of the state five years without examination by either state or county boards. Louisville has a training school connected with its public-school system; and the Frankfort public school has a training class. At Lexington, there is a colored school with a normal department under the direction of the American Missionary Society. Teachers' institutes are held in almost every county of the state. These institutes are conducted by professional teachers; and, being the chief agency for normal instruction in the state, receive considerable attention.

Secondary Instruction.—High schools for males and females are maintained in Louisville, and some other parts of the state. There are also academies, female seminaries and colleges, and commercial colleges. Of the former, 47 were enumerated in the state superintendent's report for 1874. The two business colleges at Louisville and Lexington, reported, in 1874, 9 instructors and 240 students.

Superior Instruction.—The following table includes the principal colleges and universities, exclusive of female colleges, in the state:

NAME	Location	When founded	Religious denomination
Bethel College	Russelville	1849	Baptist
Central University	Richmond	1873	So. Presb.
Centre College	Danville	1819	Presb.
Concord College	New Liberty	1839	Ev. Luth.
Eminence College	Eminence	1857	Non-sect.
Georgetown College	Georgetown	1829	Baptist
Kentucky University	Lexington	1858	Non-sect.
Ky. Military Inst.	Farmdale	1846	Non-sect.
Ky. Wesleyan Univ.	Millersburg	1859	M. E. So.
St. Mary's College	St. Mary's	1821	R. C.
Warren College	Bowling Green	......	M. E. So.

The female colleges are quite numerous; chief among which may be mentioned Bethel Female College, at Hopkinsville, a Baptist institution; Bourbon Female College, at Paris; the Presbyterian Female College, at Bowling Green; Baptist Female College, at Clinton; Franklin Female College, at Franklin; Lebanon Female College (Baptist), at Lebanon; Lexington Female College (Baptist), at Lexington; Logan Female College (M. E. South), at Russelville; Louisville Female College (Meth.), at Louisville; Millersburg Female College, at Millersburg; Shelbyville Female College (So. Presb.), at Shelbyville; and Stanford Female College, at Stanford. Besides these, there are several unchartered institutions which are prosecuting the work of higher education. Among these may be mentioned Warren College at Bowling Green; Daughters College, Harrodsburg; Hocker Female College, Lexington; the Kentucky College for Young Ladies, Pewee Valley; and Berea College, at Berea. The last was organized in 1858 for both sexes, without distinction of race.

Professional and Scientific Instruction.—Scientific instruction is partially provided in many of the colleges already enumerated; but special provision in this respect is made in the State Agricultural and Mechanical College, at Lexington. The course comprises the following departments: (1) English language and literature; (2) mathematics; (3) chemistry and experimental philosophy; (4) natural history and political economy; (5) mental and moral philosophy; (6) commercial training; (7) mining and civil engineering; (8) modern languages; (9) fine arts; (10) military tactics. Law is taught in a special school forming a part of the Kentucky University; and medicine in the Transylvania Medical College, now forming a department of the same university. The Louisville Medical College, Louisville Hospital Medical College, and the University of Louisville also afford opportunity for instruction in the theory and practice of medicine.

Special Instruction.—The institution for deaf-mutes, at Danville, is one of the oldest in the United States, having been founded in 1823. It is a school for the education of deaf-mutes, similar to that of New York and of Hartford, and not an asylum. Every deaf-mute in the state, of sound mind, between the ages of 10 and 30, is entitled to its privileges for seven years, free of charge. It is under the control of a board of commissioners appointed by the governor. Its resident officers are a principal, matron, steward, and physician. Its curriculum is that which is common to such institutions. The Asylum for the Education of the Blind, at Louisville, is intended to furnish instruction to every child in the state, between the ages of 6 and 16, who is deprived by defective sight from receiving the education usually given in the common schools. In addition to these institutions for special instruction, the Kentucky Institution for the Education of Feeble-Minded Children, at Frankfort, is worthy of mention. This was re-established in 1874, after having been discontinued for some years. As its name implies, it is for "feeble-minded children," not for idiots. To such children, between, the ages of 6 and 18 years, the state affords, through this institution, an education free of charge. The building is situated just beyond the city limits of Frankfort.

Society for the Advancement of Education.—On the 15th of July, 1874, a meeting was called at Frankfort to concert measures for establishing a school or schools for the training of teachers and the education of young men for classical and technical pursuits. This resulted in the foundation of the Society for the Advancement of Education.

State Teachers' Association.—This body holds annual meetings to promote the cause of common schools and popular education, and to elevate the character and advance the interests of the profession of teaching. Prominent educators from other states are usually present by invitation and take part in the proceedings, which consist of discussions in regard to school matters, a daily order of exercises illustrative of school methods, and lectures in the evening. The Louisville Educational Association is a body formed for essentially the same purpose as the Teachers' Association.

KENTUCKY UNIVERSITY, at Lexington, Ky., was chartered in 1858. With the exception of the theological department, which is under the control of the *Christian* Church, it is non-sectarian. It was opened as a college, in 1859, at Harrodsburg in the building of Bacon College, the property of which had been transferred to the university. By an act of the legislature, in 1865, the institution was removed to Lexington, the property and endowment of Transylvania University were transferred to it, and the State Agricultural College, founded with the congressional land grant, was made a department of it. In 1866, Ashland, the homestead of Henry Clay, and the adjoining estate of Woodlands, on the border of and partly within the city, the entire tract containing 433 acres, were purchased for an experimental farm and the permanent site of the university. These grounds are now the seat of the Agricultural and Mechanical College. The other departments occupy the former campus of Transylvania University, containing 20 acres in the city, with suitable buildings. The university has an endowment of about $400,000; the value of its real estate is about $250,000. The libraries contain about 10,000 volumes. It has a museum of natural history, an anatomical museum, and valuable chemical, philosophical, and astronomical apparatus. The university comprises the following colleges: (1) The College of Arts; (2) The Agricultural and Mechanical College of Kentucky; (3) The College of the Bible; (4) The Normal College (not yet organized); (5) The Commercial College; (6) The College of Law; (7) The College of Medicine (Transylvania Medical College). Tuition in the theological department is free; in arts and agriculture, its cost is $5 per year, in commerce $30, in law $60, in medicine $10 for each professor. Each legislative district of the state is entitled to send three students to the university free of charge for tuition in any of the first four colleges named above. In 1873—4, the whole number of instructors in the various colleges was 32, and of students, 406. John B. Bowman, LL. D., to whom the foundation of the university is mainly due, is (1876) the regent.

KENTUCKY MILITARY INSTITUTE, at Farmdale, Franklin Co., Ky., was founded in 1845, chartered in 1846, and placed under the direction and control of a board of visitors appointed by the governor of the state, who is, *ex officio*, inspector of the institute. The superintendent, faculty, and cadets are constituted a *quasi* military corps; and the officers are commissioned under the seal of the commonwealth. The arms are furnished by the state. The institution has fine grounds, and buildings erected at a cost of more than $100,000. The library contains 3,000 volumes. The charge for tuition is $100 per annum; for board, etc., $200. There is a preparatory, an undergraduate, a resident graduate, a civil engineering, and a commercial course. The undergraduate course is in three divisions, requiring from three to five years for completion, and comprises four departments, mathematics, languages, natural science, and English. A certificate of proficiency is conferred after a satisfactory examination in the studies of a department; in the department of languages a knowledge of two is required, of which one must be either Latin or German. The degrees of Bachelor of Mathematics, of Natural Science, and of English, are conferred after an examination in an extended course in the respective departments. For the degree of Bachelor of Languages, four languages are required. The degree of Bachelor of Arts is conferred on those receiving certificates of proficiency in three departments, and of Master of Arts upon those who receive them in all the four departments. Upon those completing the commercial course the degree of Bachelor of Commercial Science is conferred. In the resident graduate course, besides mathematical, scientific, and linguistic studies, an elementary course of medicine or a professional course of law may be pursued. In 1875—6, there were 8 instructors, 51 students, and 222 *alumni*. The superintendents have been as follows: Col. R. T. P. Allen, 20 yrs.; Col. E. W. Morgan, 7 yrs.; B. B. Sayre, 2 yrs.; and Col. Robert D. Allen, the present incumbent, 2 yrs.

KENTUCKY WESLEYAN COLLEGE, at Millersburg, Ky., under the control of the Methodist Episcopal Church, South, was chartered in 1859 and opened in 1866. It has a four years' course, with departments of English language and literature, history and philosophy, chemistry and natural science, mathematics, Greek, and Latin. All these are necessary to the degree of A. B., and with the exception of Greek and Latin, to the degree of B. S. In 1875—6, there were 5 instructors and 94 students. The value of its buildings, grounds, and apparatus is $40,000; amount of productive funds, $45,400. T. J. Dodd, D. D., is (1876) the president.

KENYON COLLEGE, at Gambier, Ohio, is under Protestant Episcopal control. It was first incorporated under the title of the Theological Seminary of the Protestant Episcopal Church in the Diocese of Ohio, and was opened for elementary instruction at Worthington, in 1825. By a subsequent act of the legislature, the president and professors were constituted the faculty of a college, under the name of Kenyon College; and, in June, 1828, the institution was removed to its present site. In 1840, the theological department was separated from the college, and constituted the Theological Seminary of the Diocese of Ohio. Auxiliary to the college, there is a preparatory school. The college park comprises 50 acres, and contains four college buildings and six houses for the professors. At some distance, are the buildings of the preparatory department and the theological seminary. The college has an endowment of $100,000, an astronomical observatory, and libraries containing 19,000 volumes. The value of its buildings, grounds, and apparatus is $160,000. In 1873—74, there were 8 instructors and 66 students (13 preparatory and 53 collegiate). The number of *alumni*, in 1872, was 453. The presidents of the college have been as follows: the Rt. Rev. Philander Chase, D. D., 1825—31; the Rt. Rev. Charles P. McIlvaine, D. D., D. C. L., LL. D., 1832—40; David Bates Douglass, LL. D., 1840—44; the Rev. Samuel Fuller, D. D. (provisional), 1844—5; the Rev. Sherlock A. Bronson, D. D., 1845—50; the Rev. Thomas M. Smith, D. D., 1850—54; Lorin Andrews, LL. D., 1854—61; Benj. L. Lang, A. M. (acting), 1861—3; Charles Short, LL. D., 1863—7; the Rev. James Kent Stone, A. M., 1867—8; Eli T. Tappan, L.L. D., 1868—75; and the Rev. E. C. Benson, A.M. (acting), the present incumbent (1876).

KINDERGARTEN (Ger., *children's garden*), a peculiar system of education, founded by Friedrich Froebel (q. v.), designed to precede all other elementary training, and to prepare the child for regular instruction by exercising all its powers so as to render it *self-active*. While the reformers of education before his time, Pestalozzi included, whose assistant he was, treated the youthful mind, more or less, as a passive recipient of truth, goodness, and beauty, it was Froebel's fundamental idea to set the child to do whatever it could be induced to do as a kind of amusement, exercising its observing faculties in connection with its playthings and games, and thus to create in it an interest in learning. He discovered, by means of half a century's attentive practice in teaching, in association with many other excellent educators, that the faculties of most children are stunted in infancy and earliest youth by the want of appropriate mental food; that every child may be developed (may develop itself) into a self-educator by appropriate amusements; and that, in this manner, pleasure may be made the most efficient instrument in the first stages of education. He studied all the plays and games in use from the most ancient times, in order to find their special adaptation to mental and bodily growth, and thus formed a complete philosophical system of early intellectual culture. This culture was to begin in the earliest years, with ball plays, accompanied by snatches of song and rhyme; later, with a sphere, a cube, and a cylinder of wood, used for various amusing exercises, and calculated to enliven the attention, and increase the self-activity of the infant. The two little books for mothers, which contain his suggestions for this purpose, disclaim any merit of invention; he considers them derived simply from a diligent observation of the methods of many excellent and successful mothers. But it was not from books alone that he intended that mothers should learn how to train their children. They were to be educated, as young children, in a *kindergarten*, and afterwards, before graduating from the upper classes, to learn the art of infant education in a model *kindergarten*. It was in this way that he hoped to render, in the course of time, all mothers true educators of infancy, the centers of happy family circles, and the priestesses of a higher humanity, so that they might be "in harmony with themselves, with nature, and with God."—But mere family education being liable to one-sidedness and exclusiveness, social education should begin early, in order to complement the former. During part of the day, the child should be in company with many other children of the same age, and should engage in such plays as supply, in a gradually ascending scale, proper food for the mental and bodily appetites and functions, while making the company of little ones as happy as possible. This can be done only under the guidance of a true teacher, who should be a female capable, by natural endowments and previous study, to take the place, in this respect, of the mother. The locality should be a hall in a garden, with flowers, shrubs, trees, each child having its own flower-bed, so that it may learn how to raise plants, and to enjoy nature. The playful occupations of the pupils comprise a great variety of plays in a given order which, however, should not be absolutely fixed, but should afford a healthy change, without inducing habits of imperfect attention and restlessness. None of these occupations were the invention of Froebel; they had all been practiced more or less before his time. But their combination into a harmonious whole, their adaptation for mental food in every direction, and their development in detail must be set down as Froebel's creation; and the experience had with them for more than twenty-five years, and in many hundreds of kindergartens, justifies the wisdom of the sytem. Although meeting at first with a most stubborn opposition on the part of governments, sects, and the teaching fraternity, the kindergarten has, step by step, made friends of enemies, silenced the most severe critics, and won favor with governments (in Austria, Italy, and Russia), with the Roman Catholic bishops (in Belgium, France, Hungary, and many parts of the United States), and with orthodox Protestants of various denominations. It has been endorsed by the great conventions of German teachers, after a protracted study of its results; and, in America, by the National Teachers' Association, at the meeting held at Elmira, in 1873. In short, it seems to be destined to be universally adopted, and to be connected with every infant school. There is still much controversy among the followers of Froebel themselves in regard to the minor details of the system; and some improvement has been made upon his own first practical realization of the idea, which, from insufficiency of means, could not be all that he desired; but the indefinite perfectibility of the system in practical details, according to its principles, insures its progressive success.—The exercises of the kindergarten are alternately carried on in a sitting, and in a standing or walking position, for the sake of a salutary change, and are partly such as can, without special training, be guided by any good teacher; namely, singing; the reciting of child-like poetry committed to memory by means of the teacher's frequent repetition; light gymnastics, marching exercises, and easy ball plays; acting the doings of men and animals; all these accompanied from time to time with song, or turned into object lessons by frequent conversation on the things mentioned or represented; also amusing employment with playthings, called *gifts*, of which there are several sets. (See GIFTS.) The guidance of these occupations requires a practical training, on the part of the teacher, and a theoretical study which never can be too thorough, if the pupil's mental and moral development is to become what Froebel intended it to be. Each of these exercises serves a threefold purpose,—to produce forms of beauty, forms of life (such as resemble things that occur within the child's experience), and forms of knowledge (such as may lead to a knowledge of the qualities, quantities and actions of objects). The child itself is to produce these forms; the teacher is not to teach them, but to lead his pupil by suggestions conveyed in questions or conversation, so that the child may become inventive. To do this properly, Froebel has advised a method based on the *law of contraries* and their *combination into a higher unit;* but the teacher is to abstain from all learned lore— from using abstract expressions. Abstract notions and words are severely banished from the kindergarten; it is merely concrete facts, which the child can learn through the senses, and can clothe in its own language, that can become familiar to it by its own mental assimilation. Neither is discipline to be maintained by authority or by any mechanical means; but by the suggestions of the teacher, and by the pupils' own absorption in the interest of their occupations. Thus children are, at an early age, enabled to discipline themselves through pleasant employment, to submit to the will of the majority of their equals, on the one hand, or to assert, on the other, their own free volition, if they can induce others to agree with them. Thus, they are to take their first lessons in moral self-government.

An objection has been urged to the general introduction of the kindergarten as being too costly; but experience has established the indisputable fact, that a good kindergarten need cost no more than the best primary school. The genuine *kindergartner* — and none but such ought to be employed — can superintend more than a hundred children at a time, provided she begin with no more than twenty, adding twenty more as soon as she has a good assistant able to replace her; and again twenty more, and so on, whenever one more assistant is prepared to take her place. Such assistants may be pupils of the training or normal school classes, who wish to acquire the art of infant education, and need not be paid for their assistance. These pupil-teachers will not, of course, by merely six months' help in this way, be fully able to conduct a kindergarten independently; but they will learn enough to be valuable assistants, and to become good educators as mothers. This is not merely an economical measure, but is sustained by pedagogical principles. The little pupils of a kindergarten, from four to seven years old, will form several grades, that can simultaneously be engaged only in certain occupations; while, in all others, they must be separately employed. As, then, divisions into grades are indispensable, and the principal teacher must go from one to the other, she can leave all the grades under the guidance of proficient assistants, taking the pupil-teachers along from division to division, thus affording them an opportunity to witness the greatest variety of exercises possible within a short space of time, and to practice every one under her direction. Besides, she can hardly fail to receive valuable support in the singing, articulation, and gymnastic exercises, from the talents of some of her assistants. But even more important is the following consideration. It is almost impossible to carry on a genuine kindergarten successfully without the exercise of a wide-spread and lively interest in it among the women, especially the mothers, of the community. So long as they do not frequently visit the institute, they will not fully appreciate its purposes and results; they will insist that their children should begin to learn the alphabet; and, if that is not done, they will perhaps take them away to some primary school. Many *kindergartners* of our country yield to the demand of the mothers, and make the alphabet and ciphering a part of the regular kindergarten exercises; but this is a positive loss to the children.

A prize essay on the question, "How may the kindergarten be organically connected with the (Public) School," was, a short time ago, called for by the Education Society of Germany; and the prize was awarded to Dr. A. Richter, of Leipsic. The reasons for rendering the kindergarten a universal institution, which are given in this essay and in several others that were honorably mentioned, are here presented. If it be granted that the first education, imparted through a good kindergarten, is far more effective than that obtained in a common elementary school, it will not do to combine a number of pupils that have completed their kindergarten course, with such pupils as come directly from the nursery or from the street. The two sets of pupils will form a most incongruous body. The former, possessing a more or less harmonious development of all their powers, and a certain degree of self-activity and self-control, admit of a more rapid course of primary teaching and more advanced methods of instruction than would be proper for children entirely untrained. These pupils would, therefore, be greatly retarded in their progress by being subjected to the same treatment as the other pupils, who come to school with an insufficient preparation, who are, perhaps, unable to understand what the teacher says, and to make themselves understood by him (or her), who need a rigid uniformity of mechanical discipline and a preparation of their powers for the school exercises. This difference must remain the same in the primary, grammar, and high school classes; for, in all, the kindergarten pupils must, on account of their self-activity and self-control, need a different management from that of the others. Hence the need of affording to all the children who attend the elementary school, a preliminary course of training by means of kindergarten exercises. A general introduction of this system is impossible until normal schools afford the instruction requisite to prepare teachers for the work. American teachers have already recognized the value of the system. At a meeting of the *National Educational Association*, held in Elmira, in 1873, resolutions were adopted, (1) recommending the kindergarten "as a potent means for the elevation of primary education, and for the development and promulgation of the principles of sound educational psychology"; (2) urging " upon the attention of all practical educators and boards of education the importance of initiating experiments with the intent to determine the best methods of connecting the kindergarten with our current educational system"; and (3) suggesting that "all teachers study Froebel's system, in order to be instrumental in founding such institutions, and to hasten the advent of their general introduction." Efforts have been made by the *German-American Teachers' Association* to found a normal and model school for the purpose of training teachers for the management of kindergartens. The report of the U. S. Commissioner of Education for 1874 enumerated 55 of these schools in various parts of the United States, in which there were 125 teachers, and 1,636 pupils. The experimental introduction of the system in connection with the public schools of St. Louis, in 1874, is represented as being eminently successful. At the date of the last annual report of the superintendent of schools in that city (1874—5), there were 7 kindergartens connected with as many of the public schools; and the whole number of kindergarten pupils was 457. The following advantages are claimed for the system: (1) The kindergarten children submit more readily to school discipline; (2) the average intelligence of the pupils is greatly superior to that of children who enter school without previous training; they are more accurate in observation, and seize ideas with more rapidity and exactness than other children; (3) in addition to superior general development, children thus trained show special aptitude for arithmetic, drawing, and natural sciences, and can express what they know with greater correctness and fluency.

In Germany, where there are, as yet, no kindergartens dependent on the state, and only a few dependent on communities, efforts are being made by the National Education Society to induce the governments to authorize a general introduction of the system, with all the steps preliminary thereto. An experiment has also been begun in Austria and in Würtemberg, to establish Froebel's Labor School. This is a continuation of the kindergarten occupations through higher stages of development. Only about one-half of the school time is spent in the ordinary kind of primary and secondary instruction; the remainder is devoted to recreation and occupations, such as singing, declamation, drawing, modeling, gymnastics, geometrical object lessons and exercises, paste-board work, wood work, and metal work, etc. This experiment has also been carried on for the last five years, at a German-American school in Newark, N. J., on a smaller scale, but with very satisfactory results.

Owing to the necessity of special skill and training in order to conduct a kindergarten efficiently, many persons who undertake this work fail, through want of preparation, to produce the results designed. In this way spurious kindergartens have caused much complaint, and brought considerable discredit upon the system. The test of a good kindergarten is its obvious effect upon the pupils, in exciting cheerfulness, intelligence, activity, and a fondness for the school work. If, on the other hand, the children dislike the school, it is an evidence that there is a want of tact and skill in its management. There may, indeed, exist in such a school all the occupations recommended by Froebel, and each may be used according to the established formula; but if the spirit in which the exercises are to be conducted is missing, if the treatment is mechanical, all the moral influence which should spring from the cheerful self-activity of the child, is lost. If too, the teacher shows always the calm and dignified deportment of the ordinary class disciplinarian, instead of entering with all her heart into the harmless joy from which the child's self-government is to take a fruitful growth, and calming only the troublesome excess of this mirth by now and then a look, a word, or a gesture, she is not well fitted for her calling. A genuine kindergarten teacher will, like the best of mothers, take a lively interest in remedying, as far as possible, the bodily, mental, and moral defects of every child under her care,—uncleanly and disorderly habits, want of attention, stammering, color-blindness, a bad gait or posture, imperfect articulation, etc. She will, in this way, earn the gratitude of the children and their parents, and exert a great moral influence. Her efforts in this respect are, in a great measure, facilitated by the pliability of the child's powers, as well as by its desire to avoid ridicule, and to enjoy the society of its comrades. Abundant experience teaches, that there need be no incurable cases of the above kind among children who have the full use of their senses; that all children may learn drawing, singing, correct enunciation, geometry, and many other arts and accomplishments that are, by common prejudice, pronounced attainable by those only who are specially gifted. It is evident, therefore, that a kindergartner can hardly be too well educated; and, also, that no education repays so abundantly its cost. — See Friedrich Froebel, *Gesammelte pädagogische Schriften, herausgeg. v. Wichard Lange* (Berlin, 1862); B. Marenholtz-Buelow, *Die Arbeit und die neue Erziehung nach Froebel's Methode* (Göttingen, 1875); H. Goldammer, *Der Kindergarten* (Berlin, 1874); Lina Morgenstern, *Das Paradies der Kindheit.* (Leipsic, 1871); A. Koehler, *Der Kindergarten in seinem Wesen dargestellt* (Weimar, 1868); and *Die Praxis des Kindergartens* (3 vols., Weimar); also, the monthly periodical *Erziehung der Gegenwart*, published in Dresden, which is chiefly devoted to the cause of the kindergarten. The chief English publications are: Ad. Douai, *The Kindergarten* (N. Y., 1871); W. N. Hailman, *Kindergarten Culture* (Cin., 1874); H. Hoffmann, *Kindergarten Toys* (N.Y., 1874); Aug. Koehler, *Kindergarten Education* (N.Y., 1876); M. Kraus-Boelte and John Kraus, *Kindergarten Guide* (N. Y., 1876); Mrs. Horace Mann and Eliz. P. Peabody, *Moral Culture of Infancy and Kindergarten Guide* (N. Y., 1876); Jos. Payne, *Froebel and the Kindergarten System* (London, 1874); Eliz. P. Peabody, *Education of the Kindergartner* (Pittsburgh, 1875); Johannes and Bertha Ronge, *Guide to the English Kindergarten* (London, 1875); Edw. Wiebe, *The Paradise of Childhood* (Springfield, 1869).

KINDERMANN, Ferdinand, one of the greatest educational reformers of Austria, born at Königswalde, in Bohemia, Dec. 27., 1740, died May 25., 1801. When he was appointed, in

1771, parish priest of Kaplitz, he found the school of that town, as well as the schools of Bohemia in general, in a most deplorable condition. There was no discipline whatever, the methods of instruction were entirely mechanical, and there was scarcely any attempt at classification. Kindermann resolved to make the reformation of the school the work of his life; and, as he says himself, the first day which he gave to his pastoral duties, was also the first day devoted to the school. He taught the teachers how to instruct, and the children how to learn; and by equally enlisting the interest of teacher, children, and parents, met in a short time with complete success. The school of Kaplitz became famous throughout Bohemia, and even beyond its borders; and priests and teachers were sent there from various towns to study the method which had achieved so great a result. In 1775, Kindermann was appointed chief superintendent of all the German schools of Bohemia, and councilor of the school commission. In the same year, he also became professor of pedagogy at one of the gymnasia of Prague. In his new position, he devoted his attention chiefly to the development of the normal school of Prague, through which he exerted the most beneficent influence upon the other Bohemian schools. The empress Maria Theresa acknowledged his services in many ways, and raised him to the knighthood, under the title of Knight von Schulstein. Later, he was appointed bishop of Leitmeritz.—The method which Kindermann followed and recommended was, on the whole, that of Felbiger (q. v.); but, in many respects, he pursued his own way, laying special stress on the catechetical method. His desire to increase the prosperity of the people by the improvement of education, induced him to train the children of his school in spinning, sewing, knitting, and also in agriculture, horticulture, and the rearing of silk-worms. He thus became the founder of the industrial-school system in his country.—See Aigner, *Der Volks- und Industriereformator Bischof Ferdinand Kindermann* (1867).

KING COLLEGE, at Bristol, Tennessee, founded in 1868, is under the control of Presbyterians. It is supported by tuition fees, varying from $12 to $25 per term of 20 weeks, and the proceeds of an endowment of $30,000. It has a preparatory and a collegiate department. In 1875—6, there were 4 instructors and 76 students. The Rev. James D. Tadlock has been the president from the commencement of the institution.

KING'S COLLEGE (London) is erected on a site which was given by the Crown, on the east side of Somerset House, in the Strand. Its foundation was owing to the strong dissatisfaction which many felt at the total exclusion of religious teaching from University College, which had opened its classes in 1828, three years earlier than King's. Accordingly, students at King's are instructed in the doctrines of the Church of England; although a liberal conscience clause is in operation, which enables Jews and other religionists to share largely in the benefits of the institution. No person, however, who is not a member of the Church of England can hold any office in the college, with the exception of the professorships of oriental literature and modern languages. In other respects, King's College does not materially differ from University College, originally partaking, like it, of the proprietary character, and exhibiting the same adherence to the old studies and the new. There are six departments in the college; namely, (1) Theological; (2) General Literature and Science; (3) Applied Sciences, chiefly engineering; (4) Medicine; (5) Evening Classes; (6) School for boys. The arrangements of the college are wholly under the supervision of the principal, the Rev. Canon Barry. There is also a head-master of the school.

The students at King's are either matriculated or occasional students; the former being those who are admitted to the regular and prescribed courses of study, the latter those who take such classes only as suit their purposes. In Lent term, 1875, there were, in the six departments, the following matriculated students and pupils: (1) 24; (2) 47; (3) 70; (4) 135; (5) 86; (6) 553. If to these be added 38 occasional students in the morning, and 447 occasional students in the evening, the total will be 1,400. This total would be much increased, if account were taken of certain evening lectures not yet included in the regular system, such as the Gilbart lectures on banking, largely attended by clerks.—The Applied Sciences department is highly esteemed by professional men, and, for some years past, has been attended by from 75 to 95 students. It has, besides other appliances, two good workshops, one for working in wood, and the other for working in metal. There are about 48 professors, besides lecturers, demonstrators, and the masters in the school. Many of these and of the old students are men of great eminence. Sir Charles Wheatstone, the joint-inventor of the electric telegraph, was the professor of experimental philosophy from 1834 until his death, in 1875. The management of the college rests with a council of 42 governors. Of these, 24 are appointed by the proprietors, six retiring every year. The remainder are either, *ex officio*, governors or life-governors appointed by the visitor. The college buildings, with fittings and additional land, cost £180,000. The endowments produce a yearly income of £880, which is specially appropriated to certain fixed purposes. The ordinary expenditure is, therefore, defrayed by the fees, three-fourths of which are paid to the professors, the other fourth being retained by the college.—The college has a hospital near Lincoln's Inn Fields; it has also a chapel for divine service on Sundays and week-days. A small number of students reside within the college.—See the *College Calendar*, and the *Fifth Report of the Royal Commission on Scientific Instruction.*

KNOX COLLEGE, at Galesburg, Ill., was founded in 1836, and fully organized in 1841. The first class graduated in 1846. It is non-sectarian. The productive funds amount to $110,000; and the buildings, grounds, etc., are valued at $190,000. The libraries contain 6,600 volumes. There are also cabinets of natural history. The regular tuition fees vary from $20 to $30 per annum. The institution comprises a college, a ladies' seminary, and an academy, the first of which includes a classical and a scientific course. In 1875—6, there were 12 instructors, and 325 students, of whom 41 were in the college. The presidents have been as follows: the Rev. Hiram H. Kellogg, to 1845; the Rev. Jonathan Blanchard, to 1858; the Rev. Harvey Curtiss, to 1863; the Rev. Wm. S. Curtiss, D.D., to 1868; the Rev. John P. Gulliver, D. D., to 1872; Prof. Albert Hurd (acting), to 1874; and Newton Bateman, LL. D., the present incumbent (1876).

LAFAYETTE COLLEGE, at Easton, Pa., under Presbyterian control, was chartered in 1826, and fully organized in 1832, with the usual classical course of study preparatory to the learned professions. The Pardee Scientific Department was added in 1866, through the munificence of Mr. Ario Pardee of Hazleton, whose gifts for this purpose amount to nearly $500,000. The college has seven dormitories, four of them, known as students' homes, having also families residing in them, and providing board and a home for such as desire it. It has five buildings of instruction and manipulation. The Pardee Hall of Technical Instruction, built and fitted up at a cost of $250,000, was dedicated in 1873. The chemical laboratories are perhaps unequaled in this country, and those of mining and metallurgy, mechanics and physics, are of the best. The department of natural history contains the most complete collection of the plants of Pennsylvania. The college has libraries of over 20,000 volumes, and is especially rich in the department of Anglo-Saxon and early English. It maintains a reading room, in which, besides papers and periodicals, the reference books most frequently needed in each study are kept for constant use. The methods of instruction in the two first years are those of the gymnasium. The classes are kept in small divisions; and short lessons are thoroughly learned, and accompanied by many exercises of practice, and elementary explanation, often repeated. In the two last years, there is more attempt to stimulate general investigation, and to communicate advanced thought and methods by lectures, and by requiring the preparation of essays of research. It now offers five courses, of four years each; namely, classical, scientific, engineering, mining and metallurgy, and chemistry, leading respectively to the degrees of Bachelor of Arts, Bachelor of Philosophy, Civil Engineer, Mining Engineer, and Analytical Chemist. Partial courses may also be taken, and opportunities are afforded for post-graduate study. A three years' post-graduate course leads to the degree of Doctor of Philosophy. A law department was opened in 1875. The cost of tuition is from $15 to $75 per year. In 1875—6, there were 28 instructors and 335 students in the academic departments. The college has been honorably associated with the progress of meteorological science through the labors of Prof. J. H. Coffin, LL. D., by whom the government observations and the collections of the Smithsonian Institution have been here reduced and prepared for publication; also, since the election of Prof. F. A. March, 1855, with the study of Anglo-Saxon and English, in connection with comparative philology and history, in which it has been a leader (see ANGLO-SAXON, and ENGLISH, THE STUDY OF); it is also distinguished for its courses in the Latin and Greek of Christian writers, established, in 1872, by an endowment from Mr. Benj. Douglass of New York City. Since 1864, under the presidency of the Rev. W. C. Cattell, D.D., it has also become a center of scientific and technical study for the coal and iron districts of Pennsylvania and New Jersey. The presidents of the college have been as follows: the Rev. George Junkin, D. D., 1832—41, and 1844—8; the Rev. J. W. Yeomans, D. D., 1841—4; the Rev. C. W. Nassau, D. D., 1849; the Rev. D.V. McLean, D. D., 1850—57; the Rev. G. W. Mc Phail, D. D., 1857—63; and William C. Cattell, D. D., since 1863.

LA GRANGE COLLEGE, at La Grange, Mo., was chartered in 1859, and is under the control of the Baptist denomination. The college has valuable meteorological, astronomical, chemical, and electrical apparatus, a good mineralogical and geological cabinet, and a growing library. It is chiefly supported by tuition fees varying from $24 to $40 per year. During the present year an endowment of about $25,000 has been secured. Candidates for the ministry receive tuition free. There is a primary, a preparatory, and a collegiate department, the last having a classical and a scientific course. Both sexes are admitted. In 1874—5, there were 10 professors, 143 students, and 42 *alumni* (24 males and 18 females). J. F. Cook, LL. D., is (1876) the president.

LANCASTER, Joseph, an English educator, born in London in 1778; died in New York, Oct. 24., 1838. He was the promoter, though, probably, not the originator, of the system of instruction or school organization which, for a long time, passed under his name. Of an imaginative and excitable disposition, Lancaster, at an early age, showed the enthusiasm of a true zealot. Thus, when only fourteen years old, upon reading Clarkson's *Essay on the Slave Trade*, he was seized with the desire to educate the blacks, so that they might be able to read the Scriptures, and, to that end, ran away from home, carrying a Bible and a copy of *Pilgrim's*

Progress in his pocket. The captain of the vessel, however, in which he proposed to sail, prudently sent him back. At sixteen, he joined the society of Friends; but, shortly afterward, having become interested in the education of the poor, by an observation of the scanty means provided for that purpose in London, he addressed himself to the work which became afterwards the business of his life. In 1797, Dr. Andrew Bell (q. v.) published a pamphlet, entitled *An Experiment in Education, made at the Male Asylum of Madras*, in which the system, variously known as the *monitorial, mutual instruction*, or, afterwards, *Lancasterian* system, was set forth. This pamphlet attracted little attention in England. In the following year, Lancaster opened a school in Southwark, and after conducting it long enough to discover that the impulse of enthusiasm with which it was started, was not sufficient to uphold it, began to cast about for some well-matured plan on which it could be continued. The extent to which Dr. Bell's pamphlet influenced him at this time has never been definitely ascertained, the obscurity attending the matter having been increased by his own contradictory assertions. He began, however, to put into practice the principal features of Dr. Bell's system, and secured so general a recognition of its merits, that schools organized upon that system began to spring up all over the country. The church, alarmed at the success attained by a dissenter in educating the poor, began to open similar schools under the direction of Dr. Bell, a member of the established church, whose merits, originally neglected or overlooked, were now recognized and extolled. The excitement produced by this rivalry was the means of adding largely to school revenues throughout the country; and thus the cause of education was benefited, whatever the motives may have been which animated the rival factions. From 1807 to 1811, Lancaster traveled through the country, lecturing on the subject of education, and illustrating his method by the help of monitors who accompanied him; and it is said that, during one of those years, a new school according to his system was opened every week. The enthusiasm thus created soon led, however, to great pecuniary success, but without permanent benefit to the institutions which he had founded, since his ardent temperament and want of business capacity constantly subjected him to serious embarrassment. In 1812, he attempted to found a school composed entirely of the children of wealthy parents; but he failed, and was adjudged a bankrupt. In 1818, he visited the United States, and was well received; but his want of discretion again brought him into trouble. In 1829, he went to Canada, where his fame procured him legislative aid in the furtherance of his educational projects; but again becoming embarrassed pecuniarily, he removed to New York, where some friends had purchased for him a small annuity. A description of the system known as the *Lancasterian*, will be found elsewhere in this volume. (See BELL, and MONITORIAL SYSTEM.) Of the extraordinary success achieved by Lancaster in its application, and the unselfish devotion of his life to its practice, we have the most abundant evidence. His course of instruction originally included reading, writing, arithmetic, and a knowledge of the Bible, the fee for tuition being four pence a week; while many, even from the first, were admitted free. Over the door of the school-house, we are told, was printed the announcement, "All that will, may send their children, and have them educated freely; and those that do not wish to have education for nothing, may pay for it if they please." The children came to him "like flocks of sheep," and his school, in London, was sometimes attended by a thousand. It became one of the points of interest for visiting foreigners, and of persons of all classes interested in the subject of education. The wonderful discipline maintained was explained by him in the rule, "Let every child have, at all times, something to do, and a motive for doing it". In applying it, some of his methods were certainly objectionable, especially his practice of giving rewards, which was carried to an unhealthy excess. "It is no unusual thing for me," he said on one occasion, "to deliver one or two hundred prizes at the same time; and, at such times, the countenances of the whole school exhibit a most pleasing scene of delight, as the boys who obtain prizes commonly walk round the room in procession, holding the prizes in their hands, and preceded by a herald proclaiming the fact before them." His ingeniously varied methods of punishment, also, would hardly be regarded with favor, if judged by the best disciplinary standard of the present time. These consisted mainly of devices for bringing the public opinion of the orderly portion of the school to bear upon the offender by means of ridicule. This course was adopted by Lancaster for the purpose of avoiding corporal punishment, which he detested. His school revenue, beginning with the humblest contributions of the poor of London, rose by slow degrees at first, till it finally embraced gifts of land and money from noblemen of all ranks, and even from the king (George III.), who, in 1805, sent for him, and after receiving from him in person an account of the work that had been accomplished, expressed his emphatic approval of it, and the desire that every poor child in his dominions should be taught to read the Bible, promising any aid in his power to promote that object. The novelty and economy of the plan of Lancaster insured it, for a time, a wonderful degree of success; but it is now considered to have been much overrated, and is of little value in our day, since it principally depended upon rote-teaching. In Holland, France, and Germany, the reaction soon set in, and led to very decided modifications. In England it is still in use as a means of relieving the teacher of much work not essentially educational, by the employment of the aptest scholars as assistants. By such employment, also, the teacher is enabled to select those pupils who are best qualified to be trained for the profession of teaching. The distinctive service, however, rendered by Lancaster to the cause of education, was the wide-spread interest and enthusiasm excited in its behalf, and his vindication of a non-sectarian, though Christian, system. His published works are, *Improvement in Education* (London, 1805), several elementary school books, and many pamphlets in defense of his system. For interesting accounts of his life and labors, see *Life of Lancaster*, by William Corston; and Lord Cockburn, *Memorials of his own Time;* also Leitch, *Practical Educationists and their Systems of Teaching* (Glasgow, 1876).

LAND GRANTS, Congressional. See United States.

LANE UNIVERSITY, at Lecompton, Kan., founded in 1865, is under the control of the United Brethren in Christ. It has an endowment of $12,000 in notes and real estate. There is a preparatory and a collegiate course. Both sexes are admitted. In 1872—3, it had 2 instructors and 81 students (70 preparatory and 11 collegiate). The presidents have been as follows: the Rev. Solomon Weaver, 1865—6; the Rev. David Shuck, A. M., 1866—70; N. B. Bartlett, A. M., 1870—74; the Rev. David Shuck, A. M., again elected in 1874; and N. B. Bartlett, A. M., elected a second time, in 1876.

LANGUAGE (Lat. *lingua*, the tongue, speech), according to the ordinary acceptation of the word, is the utterance of articulate sounds for the purpose of expressing thought. This mode of expression constitutes one of the characteristic faculties of man; since no community of human beings, in historic times, has been found entirely destitute of language; and a broad line of demarcation separates every kind of human speech of which we have any knowledge from all the modes of expression used by brutes.

But though common to men of all degrees of culture, and, as far as we know, in all periods of time, language presents an infinite number of varieties. The further we remove from civilization, the greater is the number of different languages that are met with. "At the first attainable period of our knowledge of it, whether by actual record, or by the inferences of the comparative student, it is in a state of almost endless subdivision. The divaricating forces in linguistic growth are in the ascendant; dialects go on multiplying, by the action of the same causes that had already produced them. But wherever civilization is at work, an opposite influence is powerfully operating. Out of the congeries of jarring tribes are growing great nations; out of the Babel of discordant dialects are growing languages of wider and constantly extending unity. The cultivated languages have been and are extending their sway, crowding out of existence the *patois* which had grown up under the old order of things, and gaining such advantage that men are beginning to dream of a time when one language may be spoken all over the earth." (Whitney, in *Life and Growth of Language*.)

The scientific inquiry into the nature of linguistic differences, and the relation of the different languages to each other, is of a comparatively recent origin. The Greeks and the Romans had a number of grammarians, but most of them had an acquaintance with only their own language, or, as in the case of the Romans, with two languages, and they were, therefore, unable to make a sound generalization. There is, in fact, hardly any work prior to the time of Leibnitz, which, considered in the light of the present linguistic atttainments of scholars, is of any intrinsic value. The ideas of Leibnitz, and Herder (in his prize essay *On the Origin of Language*), initiated the movement. The empress Catharine II., of Russia, took great interest in it; and the co-operation of her embassadors in Europe and Asia was enlisted in collecting the names used in a large number of languages for the different parts of the human body and for the necessaries of life. On the basis of the material thus collected, Zimmermann and Pallas prepared, by order of the empress, *Linguarum totius orbis vocabularia* (3 vols., St. Petersburg, 1787—91), the first comparative dictionary. This was followed by the more scientific work of Adelung and Vater, entitled *Mithridates* (1806—17). While these works illustrated the verbal affinities of languages, the introduction of the study of Sanskrit led to the study of comparative grammar. After these publications, Bopp, by his comparative grammar of the Indo-Germanic languages, and Jakob Grimm, by his historical grammar of the German languages, became the real founders of the science of comparative linguistics, or comparative philology, which has since been brought, chiefly by the labor of German scholars, to a very high degree of perfection. (See Dictionary, Grammar, Indo-Germanic Languages.) The comparative study of languages led at once, and naturally, to an attempt to divide all human speech into families, and to assign to every language its appropriate place among the languages of the world. This again involved the necessity of a thorough scientific study, not only of every language and dialect that is now spoken, but even of the languages that are extinct. A marvelous amount of energy and ingenuity has, in the course of the present century, been expended for the purpose of solving this task. Travelers and missionaries have explored the languages of the most barbarous and uncivilized tribes; keen philologists have spent a life-time in recovering the lost key to extinct languages of the highest antiquity, like the Egyptian, Assyrian, and Etruscan; and the professors of comparative linguistics have been indefatigable in collating all these discoveries, and in using them in order to improve the classification of languages, and to promote our knowledge of the development of human speech in general. It must, of course, be apparent at first sight, that any classification of languages, at the present time, can only be regarded as a tentative and provisional arrangement; but a glance at the labors on which all attempts at classification are based, shows that the results which already have been attained are of the greatest importance. The best known among all the families of languages is the Indo-Germanic (q. v.), which, in its totality, has been for more than two thousand years the language of the ruling races of the world, and which embraces, by the side of the English, the ruling languages in every American and European country, except Hungary and Turkey, and the two classic languages, Latin and Greek, which have borne so prominent a part in the education of the human race up to its present state of civilization. The Hungarian and Turkish languages have been recognized as belonging to two distinct branches of one common family called by different philologists Scythian (Whitney), or Turanian, or Uralo-Altaic, or Tartaric, and presenting in the phonetic structure of all its members some striking family traits. The Hebrew, the sacred language of the Jewish and Christian Bible, appears, with the Arabic, Syriac, Chaldee, Phœnician, and other tongues of western Asia and north-eastern Africa, as a branch of the Semitic family of languages, which, after the Indo-Germanic, is by far the most prominent in the history of the world, and of special importance in the history of religious thought; since the founders of all the three great monotheistic religions,—Christianity, Judaism, and Mohammedanism, belonged to it.

We have cast this cursory glance at the growth of language and of linguistic science before considering language as a subject of practical education, because it is self-evident that the results of scientific research must, in a marked manner, influence and shape every course of instruction. The influence of these results is most apparent in the higher stages of instruction; but the better insight into the nature of language thus gained can easily be traced in all works on the theory of education and in the history of elementary instruction.—The first stage in the development of language consists in the production of articulate sounds and combinations of sounds; the second, in the connection of words with conceptions; the third, in the combination of words for the expression of thought. (See Intellectual Education.) The development of language in a child should not outrun his mental development; it should at first follow, and subsequently accompany it. The child, from his first infancy, has a tendency to give some kind of expression to all the emotions of his mind. At first, various movements of the body, and inarticulate sounds serve for the purpose; when the perceptions become more distinct, the child looks around for more definite expressions, and finds them in the word-language of those who surround him. If the child has sound organs of speech, the task of the educator, at first, is comparatively easy. An artificial plan is neither necessary nor practical; an occasional influence is sufficient. By hearing the names of the objects, actions, qualities, circumstances, and relations, which he perceives, correctly and distinctly pronounced, the child obtains his first knowledge of words, and learns to associate them with the designated objects. The memory, without difficulty, retains a large number of words, and frequent practice soon leads to readiness of speech. Occasional conversations with the child on the objects of his attention, with little descriptions and narratives, afford him the necessary material for expressing the combinations of his thoughts, and aid in the development of his mind. Where the cultivation of speech is neglected in the education of a child, the intellectual development is likewise retarded. On the other hand, any attempt to force unduly the rapid development of speech, may lead to vain and thoughtless garrulity, or to a production of erroneous representations in the mind, which will obstruct its harmonious development. During this first stage of education, the mother is the child's natural and best teacher of language, and the language which the child thus learns has justly been called the "mother-tongue". Home education may receive a useful, and in many cases a very desirable, aid in a good kindergarten.

The instruction provided for in the common schools of modern times aims chiefly at perfecting the pupil in his vernacular language. The course of instruction to this end embraces exercises in spelling, reading, writing, definitions, composition, English grammar, elocution, etc. There is still great diversity of opinion among educators as to the best methods of teaching each of these branches, and as to the relative position which each of them should occupy in the course of studies. This subject is fully discussed in the special articles devoted to the branches of instruction just enumerated. All educators, however, agree in regarding it as one of the chief aims of school education to give to the pupil a good knowledge of his vernacular language, and fluency in speaking and writing it correctly. Even in those branches of study which neither solely nor chiefly aim at improving the linguistic knowledge of the pupil, as arithmetic, geography, history, etc., every educator nowadays requires that pupils shall be trained in the correction of language, and taught to avoid common errors of speech.—Nothing is more adapted to illustrate the great progress which, in the course of the present century, has been made in the education of mankind than the steadily improving methods employed in teaching the youth of civilized countries their vernacular tongue. At Athens and Rome, instruction was given to children in reading, writing, and grammar, but it was mostly limited to the boys of the higher classes. Throughout the middle ages, Latin was the medium of instruction in all classes of schools, partly because the popular dialects had not yet attained the degree of perfection needed for expressing the thought of scholars. Even in the 16th, 17th, and 18th centuries, the study of the vernacular language made but very slow progress, and it was reserved for the 19th century to mature plans for imparting to the entire population a good knowledge of their native tongues. Hand in hand with the progress in elementary knowledge thus achieved, goes the more general demand for popular, especially periodical, literature, and the more active and more intelligent participation of the masses in public life.

There are some countries in which the entire native population speak one language; others in which two, three, or more are spoken by large bodies of the people. Among the former are Italy, Portugal, Denmark, Sweden, and Norway; among the latter, Great Britain, France, Holland, Spain, Belgium, Germany, Austria, Hungary, Russia, Switzerland, and the United States. In Switzerland, three languages,—the German, French, and Italian, are, to some extent, regarded as national languages; in all the other countries, one language only has the character of a national language, though in some cases, as in Belgium, Austria, and Hungary, it is the mother-tongue of only a minority of the population. In several of these countries, the question to what extent any other than the ruling language should be admitted into the state schools as a branch, or as a medium, of instruction, has led to animated controversies, which are far from being ended. From political reasons, it is natural that the union of an entire people in the bonds of one common language should be looked upon as most desirable; but, from an educational point of view, it will always be urged that, however desirable the universal knowledge of one national language by all the inhabitants of a country, especially a large country, may be, the principle cannot be impugned that, wherever it is practicable, the education of young children should not dispense with instruction in the mother-tongue, in order to secure an entire co-operation between home education and school education. As this question equally concerns a number of large countries, it is to be hoped that a solution may be found which will reconcile conflicting claims.—Besides the mother-tongue and the national language, the two classical and the principal modern languages are very extensively studied in schools of a higher grade. The classical languages have, to a large extent, lost the prominent position which they formerly occupied in most schemes of education; the study of modern languages, on the other hand, appears to be steadily extending. From a pedagogical point of view, many educators urge the early study of a cognate language as a means to promote, by way of comparison, a more thorough understanding of the native language. From a business or practical point of view, there is naturally a growing demand for instruction in the languages of several foreign countries. The treasures of the English, German, and French literatures are also stimulating, in an increasing ratio, the study, in many countries, of those three languages, which, by common consent, are regarded as exceeding all others in importance.—See MARCEL, *Language as a Means of Mental Culture and International Communication* (2 vols., London, 1853); and *The Study of Languages* (Lond. and N. Y., 1869); WHITNEY, *The Life and Growth of Language* (N. Y., 1875). (See also CLASSICAL STUDIES, GRAMMAR, MODERN LANGUAGES, and the special articles on LATIN, GREEK, GERMAN, and FRENCH.

LA SALLE, Jean Baptiste, a French priest and teacher, born in Reims, April 30., 1651; died in Rouen, April 7., 1719. In 1669, he was appointed canon of the cathedral of Reims, and afterwards went to Paris to complete his studies. In 1671, he was ordained a priest, and began at once the work of his life, the education and improvement of the working classes. His first project was the obtaining of a charter for a sisterhood, already established in his native place, and designed exclusively for the education of poor girls. This led to the foundation of a similar order designed to promote the education of boys, which rapidly spread throughout France, under the name of Brethren of the Christian Schools. The distinctive features of his system were, the bringing together of the teachers in a common residence, the use of the coarsest food and raiment, and vows of the strictest obedience and devotion, during a preparatory course of three years, to be renewed afterwards for life by those desiring it. No member of the order was permitted to become a priest; and to prevent any aspirations in that direction, Latin, as a study, was forbidden till the age of thirty. In order to set an example of religious poverty to his followers, he renounced his prebend, distributed his money in alms, and constantly taught in the schools. After some persecutions at the hands of secular teachers, he purchased the establishment of St. Yon, at Rouen, which afterwards became the central school of the order. In 1868, the brotherhood numbered 10,000 teachers and 300,000 pupils, in France; and in the United States, 323 teachers and 15,000 pupils. The published works by which La Salle is best known, are: *Les règles de la bienséance et de la civilité chrétiennes*, and *Les douze vertus d'un bon maître.*

LA SALLE COLLEGE, in Philadelphia, Pa., a Roman Catholic institution, founded in 1863, is under the control of the Christian Brothers. It is supported by tuition fees, varying from $10 to $20 per quarter. It has a primary, an academic, a commercial, and a collegiate department. The degrees conferred are A. B., B. S., and A. M. In 1875—6, there were 200 students (74 collegiate, 33 commercial, and 93 academic). The presidents of the college have been, Brother Oliver, Brother Noah, Brother Joachim, and Brother Stephen (the present incumbent).

LATIN LANGUAGE, one of the two classical languages, which as the language of one of the greatest empires of the world, and of one of the richest of literatures, and subsequently as the official language of the Catholic church, the literary language of western Europe, and the mother of the Romanic languages, has been among the foremost agents in developing modern civilization. The name is derived from the Latins, or inhabitants of Latium, in central Italy, by whom it is believed by some to have been spoken as early as fifteen centuries before the Christian era. According to the researches of modern philology, the Latin is one of the two branches of the Old Italic language, which, with the Greek, German, Sanskrit, and others, is regarded as one of the chief divisions into which the Indo-Germanic languages (q. v.) are divided. The close resemblance of the Latin, as well as the other (Umbro-Samnitic) branch of the Old Italic language, to the Greek has led some philologists to assume that both the Italic and the Greek language sprung from one branch, now lost, which was co-ordinate with the Sanskrit, German, and other divisions of the Indo-Germanic. The subjection of Italy to the rule of Rome, which was situated in Latium, gradually made Latin the language of all Italy. After the name of the people to whom it owes its eminent position in history, it has also been called the Roman language. For a long time, the Romans remained without a literature, the earliest work which is now extant dating about 240 B. C. Of the preceding, ante-literary period of the language nothing is now left but a few fragments of the Salian songs, of the chant of the Arval brethren, and of the law of the twelve tables, besides a few epitaphs. During the next two centuries, Latin literature was gradually developed, until, in the writings of Cicero, it reached its classic period. Though the distinction between the elegant language of the educated classes (*lingua urbana, urbanitas*) and the language of the common and lower classes of the people (*lingua rustica* or *vulgaris, rusticitas*) was early and broadly drawn, the literary language was and remained substantially the same; and the natives of the provinces of Spain and northern Africa among the Roman writers used the same language as the natives of the city, although, in regard to the spoken language, the latter claimed the same prerogative as the modern Parisians in regard to French. In the first century of the Christian era, the linguistic material was considerably enlarged by means of compounds and derivatives; in the course of the second century, the admission of a large number of archaic, ante-Ciceronian words and forms and of Grecisms, put an end to the classic period of Roman literature. After the beginning of the third century, the purity of the language and literature rapidly declined. The language of the common people invaded the literary language, provincialisms and Grecisms became more and more frequent; and although there was a revival of pure Latin in the literature of the fourth and fifth centuries, the spoken language, in constant contact with, and under the influence of, the tongues of the barbaric conquerors of the empire, gradually succumbed to that series of grammatical and verbal changes which formed the transition into the Romanic languages. In the mean while, Latin had become the liturgical and official language of the Christian Church; and, as the modern languages which arose in different countries of Europe remained for centuries devoid of a literary character, Latin became the common language of the schools and literatures of western Europe. It was the medium of instruction, not only in the convent, and in the cathedral and collegiate schools, but also in the town schools, which in the 12th century, began to arise by the side of, and frequently in opposition to, the church schools. It was this latter class of schools for which the name *Latin schools* (q. v.) came into use. The Latin of the middle ages (*Latinitas media* and *Latinitas infima*) was far inferior to that of the classic period of Roman literature; and, from the 6th to the 14th century, not one writer can be found who, for the elegance of his diction, can be regarded as a classic. The revival of classical studies in the 14th and 15th centuries caused, in literature, a return from the Latin of the Church to the language of Cicero and the Augustan age, which many writers of that period strove, with some success, to reproduce in its classic purity. The Reformation, in the 16th century, banished the use of Latin from divine service in Protestant churches; but Latin schools were as rigorously maintained in Protestant as in Catholic countries. The speaking of Latin was common among the citizens and mechanics of towns; and it is reported of the family of the learned printer Henry Stephens that not only his wife, but even his domestics talked Latin. Special importance was attributed to the speaking of Latin in the schools of the Jesuits; and also in Protestant states, like Prussia and Saxony, the gymnasia were, and partly still are, expected to train their pupils in speaking and writing Latin. In modern times, the growing opposition to the privileged position of classical studies in the educational systems of civilized nations, has diminished the study of Latin as well as that of Greek, but the former still maintains a prominent place in the higher institutions of learning throughout the civilized world, and, even in the present century, though in a decreasing ratio, is still used in scientific works. As the language of diplomacy it began to give way to the French in the course of the 17th century; but, in some parts of Europe, it was still, in the 18th century, the language of the educated classes and of political life. Thus, the Hungarian Diet, in the middle of the 18th century, received Maria Theresa, when she personally appeared to ask its support, with the memorable acclamation: *Moriamur pro rege nostro Maria Theresia*. In the Roman Catholic Church, Latin maintains unimpaired the high authority accorded to it as the language of the Church; and, as such, it is still used by the Pope in his communications with the bishops and church members of all nationalities, and by the councils of the Church in their discussions and decrees.

The Latin alphabet derives a special interest from the fact that it has been adopted for the English language and all the Romanic languages, and has thus become the medium of written expression for the thought of a large portion of the civilized world. Its early history is still far from being fully elucidated; but recent researches, especially those of Kirchhoff (*Abhandlungen der Academie der Wissenschaften zu Berlin*, 1863) have shed considerable light on the subject. It is now commonly assumed that the Latin characters are the offspring of the Æolo-Doric variety of the Greek alphabet. According to Cicero and Quintilian, the number of letters in the old Latin was 21, but only 20 appear in the earliest documents. One letter appears, therefore, to have disappeared, which, according to Mommsen and Lenormant, was Z. The letter C, as its place in the alphabet, as well as its early pronunciation, indicates, was originally identical with the Greek Γ; as it gradually assumed the sound K, it caused the introduction of the letter G, which was not in the earliest alphabet, as well as the disappearance of the letter K, which maintained itself in only a very few abbreviations. In regard to the pronunciation of Latin, grammarians, until late in the present century, were accustomed to remark that the ancient mode of pronouncing it was almost wholly lost, and that modern scholars had applied to it those principles which regulate the pronunciation of their own languages. The obscurity in which Latin pronunciation was believed to be enveloped, has, to a great extent, been removed by the learned works of Corssen (*Ueber Aussprache, Vocalismus und Betonung der lateinischen Sprache*, 2 vols., 2d edit., 1868—70) and others; and the leading representatives of Latin philology are approaching a remarkable unanimity in regard to this subject. It is regarded as probable that the Latin vowels had about the same sound as the corresponding vowels have in the Italian and German alphabets, with the exception of *o*, which may have resembled more the sound of that letter in *lord*, than in *note*. The *y*, which only occurs in words of Greek origin, sounds like the Greek υ, the German *ü*, and the French *u*. In pronouncing each of the diphthongs, the Romans distinctly uttered both of the vowels composing it. Thus in *neuter* each of the two vowels was distinctly heard, just as in the pronunciation of this diphthong in the modern Italian and Portuguese. The letter *c* was always pronounced like *k*; the *g* was always hard as in *give*; final *m* had an obscure sound, perhaps the nasal sound of the French, as in *nom*; *s* was always like the Spanish *s*, having the sound of *ss* in *miss*; and *ph*, *ch*, *th* were, as the characters indicate, pronounced as the aspirates *p*, *k*, and *t*. In its rules for accentuation and the quantity of syllables, the Latin resembles the Greek; and it was thereby, like its classic sister, enabled to develop in its poetry a rhythmical form which by far exceeds, in point of beauty, any thing that is found in any modern language. The inflectional part of the language, both in the declension of nouns, pronouns, adjectives, and numerals, and in the conjugation of verbs, also characterized the Latin at first sight as a sister of the Greek, having many points of resemblance. We meet with striking similarities in the rules pertaining to cases, numbers, genders, persons, voices, and modes, together with extensive verbal affinities. The later development of literature among the Romans deprived the Latin of many of the forms which still distinguish the Greek, and gave to the language a touch of that utilitarian character which characterized the people. Thus, there is no dual number, no middle voice distinguished in its form from the passive, and no optative mood. Besides, in both the active and the passive voice of the Latin verb, there are fewer tense-forms than are found in the Greek. An additional case in the declension of singular nouns—the ablative (which of all the Indo-Germanic languages the Latin and Old Bactrian alone have preserved), is a small offset in favor of the Latin, as far as fullness of inflectional forms is concerned.

The study of Latin is generally begun by English students at an early age. It almost invariably precedes that of the Greek, and generally the study of any foreign modern language. In many cases, the study of English grammar is either entirely postponed in favor of Latin, or only its most elementary rules are taught. At the outset, the student becomes aware that he is entering a new world of thought. The nouns which he has met with in his English reading, he has found to be subject to but very few changes. When the word *father* was used in a possessive sense, it became *father's*; if used in the plural, *fathers*; and in the plural and possessive, *fathers'*. All the various relations, except the possessive, which a noun, either in the singular or plural number, may occupy in regard to other parts of the sentence, he finds, are expressed by means of prepositions; as, *of the father*, *to the father*, *with the father*, etc. The Latin grammar presents to him quite an array of different forms; as, *pater*, *patris*, *patri*, *patrem*, etc. Thus he sees that the modifications of thought which in English are chiefly expressed by means of prepositions, are indicated in Latin by the varying inflections of the root. It requires considerable effort on the part of the youthful scholar to grasp this new idea, and it is easily seen that this effort must tend to develop and strengthen the thinking powers of the student.—However much the methods of teaching Latin may differ in certain details, no one should dispense with a thorough drilling in the inflectional part of the language and in the principal rules of syntax. Exercises in translating from Latin into English, and from English into Latin, are now quite generally connected with the very first grammar lessons. In accordance with the principles of modern educational writers, the exercises in translation are now, from the beginning, very properly given in most of the text-books in the shape of complete sentences. As it is the desire of every teacher to prepare his pupils for the reading of the Latin classics, a selection of the translation exercises from classic writers has obvious advantages. The *mastery system*, proposed by T. Prendergast, in *The Mastery of Languages* (London, 1872), inverts this process, by requiring the pupils to study sentences instead of words, committing to memory carefully constructed expressions, and learning the inflectional forms by comparison. This process approximates to the natural method of learning language, and, it is contended, leads to a fluency and ease in its use which cannot be acquired in any other way. (See R. H. Quick, *First Steps in Teaching a Foreign Language*, London, 1875.) In the system of T. K. Arnold (q. v.), the inflectional peculiarities are learned gradually, as in the *Ollendorff system*, and almost the first step taken by the pupil is an exercise in construction.—The very large extent to which words of Latin origin have been received into English can be turned to great advantage by the intelligent teacher. But few words will be met with in the Latin exercises, which are not etymologically related to words in the English dictionary; and a constant reference to this kinship not only facilitates the acquisition by the student of a copious Latin vocabulary, but at the same time enlarges his knowledge of English. The introduction of young students who have sufficiently mastered the elements of the language, to the Latin classics is considerably obstructed by the want of good juvenile works in the literature of Rome. If that literature ever had its Barbaulds and Edgeworths, their fame has perished with their works. The books which for centuries have been the first to be read in Latin schools,—Cornelius Nepos and Cæsar, were certainly not written for boys and girls. Even in Rome, they were as little read by children of ten, eleven, or twelve years, as our children of that age are expected to read Shakespeare, Gibbon, or Macaulay; and it is, therefore, undoubtedly a pertinent question, from an educational point of view, whether it is consistent with common sense to expect English boys and girls to read and appreciate writers whom the youth of the same age in their own country would have found too difficult to understand. Various attempts have been made, in modern times, to supply this want, and to provide young Latin students with suitable reading. Sometimes modern imitations of the ancient Latin have been selected for the purpose. Such, for example, is Willymot's *Century of Maturinus Corderius Colloquies*, long familiarly known in Scotland under the name of *Cordery*. Certain portions of the dialogues of Erasmus have the same object in view. As the most successful attempt of the kind, many Latin scholars regard a little work entitled *De Viris Illustribus Urbis Romæ*, and commonly known in the United States as *Viri Romæ*, by L'Homond, a French professor of the eighteenth century. This work contains the most interesting stories related by Livy, Valerius Maximus, Florus, and other eminent writers, as much as possible in the very words of those writers, and is still extensively used in the United States Great Britain, France, and, to a less extent, in Germany. Attempts have also been made to epitomize special Latin classics for the use of young students; thus, in recent times, an epitome of Cæsar, prepared by Dr. Woodford, classical master in Madras College, St. Andrews, has been in extensive use. Many of the Latin readers also contain attempts of this kind.—The number of Latin classics which are commonly read in colleges and schools, is quite small. Nepos, Cæsar, Cicero, Sallust, Livy, and Tacitus, among the prose writers; and Horace, Virgil, and Ovid among the poets, are universally regarded as the most suitable for this purpose. If we add to them the names of Plautus, Terence, Lucretius, Catullus, Tibullus, Propertius, Hirtius, and the unknown authors of the works *De bello Africano, De bello Alexandrino, De bello Hispaniensi*, and *Ad Herennium*, of the time before Christ, and Phædrus, Valerius Maximus, Velleius, Mela, Curtius, Persius, the two Senecas, Lucan, Juvenal, Quintilian, Pliny, Florus, Suetonius, Gellius, Justin, and Eutropius, of the time after Christ, we have named all the writers of ancient Rome to whose works the Latin reading of at least ninety nine out of every hundred students is restricted both during and after their school years; and the vocabulary of these is, therefore, very properly regarded by the authors of modern school dictionaries as furnishing all the words embraced within the scope of their works. The reading of Latin classics constitutes the principal part of the study of Latin wherever it is pursued, except when only the elements of Latin etymology are taught for the purpose of elucidating the structure of English. (For further remarks on the methods of reading Latin authors, see Classical Studies.) As the advantages which are expected to accrue from a reading of the Latin classics must depend on the pupil's thorough knowledge of the language, the study of grammar and the practice of translating from the vernacular into the Latin language should be continued throughout the course. Whatever portion of the whole time of a course of instruction may be assigned to Latin, after the study has been begun, it should be continued without interruption until the course is completed.—Whether exercises in Latin conversation, in original Latin composition, and in Latin versification, should be adopted in a course of Latin study in colleges and classical schools, is obviously dependent on the amount of time which is allowed for this study. This point is now more than ever a subject of animated controversy among educators. The physical sciences, which, in modern times, have made progress far exceeding the boldest expectations of former centuries, present claims to a conspicuous place in the course of instruction of every grade of schools, which are, on all sides, regarded as entitled at least to a serious consideration. The concessions which have been made to these claims, have greatly affected the place formerly assigned to Latin. It has long ceased to be the general medium of instruction in schools of a higher grade; and fluency of Latin expression, either in speaking or writing, is nowadays rarely met with, except among Catholic priests, who acquire it for ecclesiastical purposes, and at the universities of Germany and other countries of continental Europe, where the candidates for the academic doctorate still continue, in many cases, to write the required essay, and to defend proposed theses, in Latin. In order to obtain this proficiency, the German gymnasium provides a course in Latin extending through nine years, the number of hours devoted to it weekly being, for the first seven years, 10, and for the last two, 8. There are few learned institutions in Great Britain and the United States which deem it advisable to require so large an amount of the student's time for the study of Latin; since the ability to speak and write it with fluency is no longer reckoned among the objects to be accomplished by the shorter course. While the amount of time which, in various courses of instruction, may profitably be given to Latin is now, and will long continue, an open question, intelligent educators will not find it difficult, when once the amount of time has been determined, to adjust the course of instruction to it. Great mistakes are still made in this respect in many classical schools. Where the most difficult Latin authors are read by students who are not familiar with declensions or conjugations, or where original Latin compositions are required from students who are unable to translate simple sentences without mistake, the Latin course may safely be pronounced to have been wholly useless for the training of the mind, and the time given to it, to have been entirely wasted. The practice of requiring Latin addresses to be delivered, by students who cannot translate correctly, to audiences among whom there may not be a single person who understands the address, is exceedingly absurd. One of the most enthusiastic admirers of classical studies, John Stuart Mill, severely reprehends the English schools in which "the most precious years of early life may be irreparably squandered in learning to write bad Latin and Greek verses."

The grammatical treatment of the Latin language is believed to have originated with Crates Mallotes, a Greek embassador of king Attalus of Pergamus: but nothing definite is known of his labors. The first grammarian of whose work valuable remains have been preserved to us was M. Terentius Varro (died 27 B. C.), who was distinguished as the most learned of Romans. Among the numerous grammatical writers who succeeded him, Donatus, in the fourth, and Priscianus in the sixth, century were especially celebrated; and their works served, in some respects, as the basis of all later works. A new period in the history of Latin philology began with the revival of classical studies in Italy, and the invention of the art of printing. For some time, Italy remained the chief seat of Latin scholarship, but, in the 16th and 17th centuries, it was outstripped by France, Holland, England, and Germany. The Latinists of Holland distinguished themselves by introducing a strictly scientific method into Latin philology. Richard Bentley, of England, became the father of the science of verbal criticism. In Germany, the efforts of Ernesti, Heyne, Wolff, and others, caused an entire reorganization of Latin studies, which gradually led, in the course of the 19th century, to the acknowledged superiority of the German Latinists. The most notable German contributions to Latin lexicography (see DICTIONARIES), are the comprehensive dictionaries by Freund, Georges, and Klotz, the school dictionaries by Ingerslev, Georges, Heinichen, Kreussler, the etymological dictionaries by Schwenck, and Vanicek (1874), besides a number of special dictionaries for the poets, the sources of jurisprudence, the historians, and for every Latin work that is commonly read in schools. Latin grammars in the German language have been written by Zumpt (13th ed., 1874; shorter grammar, 9th ed., 1866); Madvig (3d ed., 1875; shorter grammar, 1857); Berger (9th ed., 1875); Ellendt (16th ed., 1876); Kühner (*Schulgrammatik*, 5th ed., 1861; *Elementargrammatik*, 38th ed., 1875); Lattmann and Müller (*Schulgrammatik*, 3d ed., 1872; *Kurzgefasste Grammatik*, 3d ed., 1872); Middendorf and Grüter (8th ed., 1870); Siberti (*Schulgrammatik*, 21st ed., 1873); J. Schultz (*Sprachlehre*, 8th ed., 1874; *Kleine Sprachlehre*, 14th ed., 1875); and a host of others. An alphabetical list of all the Latin grammars, dictionaries, chrestomathies, and other books relating to the Latin language which have been published in Germany since 1750, is given in Engelmann, *Bibliotheca Philologica* (3d ed., 1853).—The most celebrated of former lexicographers were Calepino, Robert Stephens, Facciolati, and Forcellini. (See DICTIONARIES.) In England, and subsequently also in the United States, the Latin lexicon of Ainsworth (1736) became the most popular work of this class. Of the English and American works published in the present century, Leverett's lexicon (1836) announces itself as an "abridgment of Facciolati and Forcellini, with improvements drawn from Scheller and Lünemann"; the lexicon of Andrews (1856) is based on Freund; that of W. Smith (1855), on Forcellini and Freund; that of Riddle and Arnold (American edition by Anthon), on Georges; that of Crooks and Schem (1857), on Ingerslev. Other Latin-English dictionaries have been compiled by Beard, Bullions, Entick, Gardner, White, and Young.—Among the Latin grammars used in American and English schools, besides translations of the grammars of Zumpt, Madvig, and others, are those of Adam (formerly very extensively used in American schools; new edition by Gould, by Fish, and by others), Allen, Greenough, Andrews and Stoddard, Anthon, Arnold, Bartholomew, Bingham, Brooks, Bruns, Bullions, Clark, Dillaway, Fischer, Gildersleve, Goodrich, Grant, Donaldson (complete Latin Grammar, 3d ed., 1867; one of the best), Harkness now extensively used in American colleges, Harrison, Key (3d ed., 1862), McClintock, Morris, Roby (2 vols., 1871—4, one of the best), Rose, Ross, Ruddiman, W. Smith, Spencer, Thompson, Waddell, and Weale. An excellent introduction to a philological study of the Latin, is Donaldson's *Varronianus* (3d ed., 1860). A comparative grammar of Latin and Greek has been written by L. Meyer (*Vergleichende Grammatik der griechischen und lateinischen Sprache*, 2 vols, 1861—5). The relation of Latin to the other branches of the Indo-Germanic family is fully elucidated in the comparative grammars of Bopp and Schleicher. (See Indo-Germanic Languages).—There are numerous editions of every Latin writer that is usually read in schools, with English notes, and in many cases with a special vocabulary. Collective editions of the Latin authors read in schools, according to a uniform plan, are, among others, the *Bibliotheca Classica*, under the direction of G. Long and A. J. Macleane (London, since 1854); the *Clarendon Press Series*, which counts among its contributors Moberley, Ellis, W. and G. Ramsay, Prichard, Bernard, Walford, Browning, Wickham, Lee-Warner (Oxford); the *Catena Classicorum*, under the direction of Holmes and Bigg (London); the series published by Chase and Stuart (Philadelphia); the editions of several of the classics by Allen and Greenough, Andrews, Anthon, Brooks, Harkness, Schmitz, Weale, and others. The best collections of this kind in Germany are those published at Berlin, under the direction of Sauppe and Haupt; and at Leipsic, by the firm of Teubner. The latter, in 1876, consisted of 61 volumes.—Histories of Roman literature have been published by Klotz (Leipsic, 1845); Thompson (London, 1852); Browne (London, 1853); Munk (Berlin, 1861); Bähr (3 vols., 4th ed., Carlsruhe, 1867); Bernhardy (Brunswick, 5th ed., 1872); Teuffel (3d. ed., Leipsic, 1876; Engl. transl., London, 1873).

LATIN SCHOOLS, a name given, in several German states as well as in the Netherlands, to a class of secondary schools. The name is derived from the fact that Latin was formerly, in these schools, the most prominent branch, and generally even the medium, of instruction. These schools gradually developed out of the "trivial schools," which, in the course of the middle ages, sprung up in many towns by the side of, or even in opposition to, the convent schools, and the cathedral and collegiate schools. The name *Latin school* did not come into general use, but alternated with that of *particular school*. When, in the 16th century, the word *gymnasium*, and (more rarely) *pædagogium* was applied to those Latin schools which were completely organized, and prepared their pupils for the university, the name Latin school was commonly reserved for the lower half of the institution. Only in exceptional cases (as in Halle), has a complete gymnasium retained the name Latin school, which is now generally on the wane. In Prussia, no distinctive name is any longer given to the lower classes of a complete gymnasium; and schools containing only the lower classes of a gymnasium, are called *progymnasia*. The largest proportion of these schools is to be found in the kingdom of Würtemberg, where many of them have only one or two teachers. In Bavaria, the name is still given to the five lower classes of the classical gymnasium, which is there called *Studienanstalt*, and also to those schools which only contain the five lower gymnasium classes. In the Netherlands, the difference between Latin schools and gymnasia is not defined. (See Netherlands.) In the United States, one of the best known of such schools is the public Latin school of Boston.

LAW SCHOOLS have been in use as a means of education for the bar, almost from the time when the bar first became a recognized profession. In ancient times, the schools of Rome, Berytus, and Constantinople, with some of minor importance, were the recognized nurseries of the legal profession. The most eminent of the Roman jurists taught in these schools. There is reason to believe that at least one such school remained at Ravenna up to a period not very long before the revival of the law; if, indeed, it was not, as some have supposed, the germ from which the famous school of Bologna afterwards sprung. From the time of Irnerius, early in the 12th century, the history of European jurisprudence has been identified with that of the schools of law, in the states of modern Europe. At present, upon that continent, the law schools of the various universities are the recognized portals of the legal profession, and of the bench. In England, legal education was, at first, conducted in the same method. The arrival of Vacarius, an Italian teacher of law, at Oxford, in the reign of Stephen, marks the introduction of scientific jurisprudence into England. He continued to teach for a period not definitely ascertained, but long enough to found a school which has left, in its glosses and other legal writings, considerable traces of its existence. The Inns of Court, at London, were probably intended, in the first place, as rivals of this civilian school, and were devoted, from the beginning, to instruction in the common law. During their flourishing period as schools, the attendance of students there was very large, in proportion to the entire population of the metropolis and of the kingdom. The well-known account given by Fortescue (in his treatise *De laudibus legum Angliæ*, cap. 49.) of the life, and mode of instruction in these schools, proves the importance of the position which they held as the chief, if not the only, mode of preparation for the English bar of that time. Their activity in this respect seems to have been at its height about the time of Fortescue, or in the 15th century. In the 16th, they became rather places of gaiety; and the readerships and other offices were perverted to means of ostentatious display. The number of students declined; and, from the middle of the 17th century, the course of instruction in them ceased to be any thing more than a mere form. Education for the bar was, henceforth, conducted in the offices of special pleaders, conveyancers, and other practicing lawyers; and it was not until the present generation that the Inns of Court have again made the effort to resume their original function. The Inner Temple led the way in this reform, by establishing, in 1833, two lecturerships, one of common law and equity, the other of general jurisprudence and international law. The latter was filled by John Austin, whose lectures, though only the first six were published in his life-time, have since exerted so great an influence upon the revival of scientific jurisprudence in England (*Lectures on Jurisprudence, or the Philosophy of Positive*

Law; edited by his widow, 1861—3; 3d edition by Robert Campbell, 1869). In 1847, another attempt was made to establish readerships or lecturerships, originating in the Middle Temple, by which body Mr. George Long was appointed reader on civil law and jurisprudence. The other Inns followed the example, and moot-courts and examinations were added by the lecturers. But no joint action of the four Inns was had until 1852, when a standing committee, or council of legal education, was appointed; five readerships were established, in which those previously appointed by the several Inns were merged; and students were required, before admission, either to attend at least two of the courses for a year, or to pass a public examination. In the mean time, a committee of inquiry, appointed by parliament in 1846, had reported in favor of uniting the four Inns into a single law university; and, in 1854, a royal commission was appointed, which investigated the subject very thoroughly, and reported in favor of the proposed measure, and of a compulsory examination before a call to the bar. No practical result, however, followed so far as the Inns are concerned until 1873, when these recommendations were partially carried out. The four Inns of Court now elect a council of legal education, and this council appoints a permanent committee of eight members, called the Committee of Education and Examination, to superintend the education and examination of students for the bar. The council also appoint six readers or lecturers, to hold office for three years, and a certain number of tutors for private instruction. There is also a paid board of examiners, six in number, holding office for two years, and re-eligible only after an interval of a year; and studentships, exhibitions, and certificates of honor are awarded to those who pass good examinations. But attendance on the lectures and examinations is not compulsory; and any person may still qualify for admission to the bar by passing, previous to his admission to an Inn as a student, examinations in the English and Latin languages and in English history, and by spending a year as pupil with a barrister or pleader.—All that has been said thus far relates only to education for the English bar as distinct from the body of solicitors. Admission to this body has always been in the hands of common law judges and masters of the rolls; and the Incorporated Law Society, a very influential organization, succeeded, as early as 1836, in introducing a system of examinations, preliminary, middle, and final, as a strict condition of admission to the roll. Candidates are examined by a committee of sixteen solicitors, generally chosen from the council of that society, together with the masters of the common law courts. The council also appoint annually three lecturers, by whom lectures are delivered to articled clerks. Attendance at these is voluntary, but no solicitor can be admitted without passing the examinations for which they prepare the student.—In July, 1870, the Legal Education Association, composed of both barristers and solicitors, and headed by Sir Roundell Palmer, now Lord Selborne, was formed, with the avowed objects of bringing about the establishment of a law university for the education of students intended for the profession of law, and the placing of the admission to both branches of the profession on the basis of a combined test of collegiate education and an examination by a public board of examiners. In every session of parliament, from that time to 1873, they made vigorous efforts to secure these objects by resolutions and bills, an account of which will be found in Mr. Campbell's preface to his *Abridgment of Austin's Lectures*. Since the latter date, attention has been chiefly occupied by the very great changes in the organization of the courts, the methods of procedure, and the fusion of law and equity. The association, however, is still engaged in prosecuting its reforms, which have been materially facilitated by these changes.

The law schools of the United States have no historical connection with those already mentioned. Their existence is due entirely to the wants of that country. Before the Revolution, it was not uncommon for law students who could afford it, to go to the mother country, and prosecute their legal studies there, nominally in the Inns of Court, really in the offices where other English students of the time prepared themselves for the bar; but the number of these was, of course, small, and the bar of the colonies was composed in a large measure, of those who had read only in the office of the nearest practicing attorney. The number of these was comparatively large. In a work published at London in 1790, entitled *A Review of the Laws of the United States etc.*, it is stated that there were at that time three hundred practicing lawyers in Connecticut, and that, "in New York, and from thence through all the northern states, lawyers swarmed." This naturally led the attention of thoughtful men to the possibility of improvement in legal education; and James Wilson, one of the signers of the Declaration of Independence, a member of the convention which framed the Constitution of the United States, and an associate justice of the supreme court, has the honor of having been the first to deliver a formal course of lectures upon American law. He held the law professorship in the College of Philadelphia, then the federal capital, and in the winter of 1790—91, delivered his first course; a second course was commenced in the following winter, but was never completed. The college became incorporated with the University of Pennsylvania, in April 1792; and the law school, for some unexplained reason, was discontinued. The lectures delivered by Judge Wilson are published in his collected works in three volumes, 8vo (Philadelphia, 1804). The honor of precedence is sometimes claimed for the Litchfield school, next to be mentioned. Judge Parker, in his pamphlet on the Harvard law school (Boston, 1871), says that Timothy Reeve established the Connecticut school in 1782 or 1784. But there is no reason to believe that the instruction given by Judge Reeve in the earlier years differed in any respect from that usually given by lawyers in their offices, till Judge Gould became associated with him in 1798. The Philadelphia school was at least the first one formally incorporated, while that of Judge Reeve was the first successful one. It was afterwards continued by the Hon. James Gould, author of *Gould's Treatise on Pleading.* This school existed for more than thirty years. It was then removed to Northampton, and soon afterward discontinued, the professor in charge, John Hooper Ashmun, having been elected to a position at Harvard. The Litchfield school had students from all parts of the Union, but its numbers were never large. The attendance at no time exceeded 50; and the total number of its students, from 1798 to 1827, was 730, or an average of about 25 per annum. The third law school, and the oldest now in existence in the United States, is that of the Law Department of Harvard University. A single professorship was established in 1815; and the school, in 1817. Until 1829, its success was very meager; but, in that year, a gift from the Hon. Nathan Dane established a new professorship to which Judge Story was elected. Professor Ashmun was associated with him; and the Harvard School sprung at once to the position which it has ever since retained, at the head of American law schools. Among its professors have been the distinguished legal authors Simon Greenleaf, 1832—48; Theophilus Parsons, 1848—70; and Emory Washburne, 1855—76; besides many other distinguished men. Several other law schools were started in various parts of the country prior to 1830; but the only ones now surviving without a break of existence are believed to be those of Yale College, 1824, and of the University of Virginia, 1825. The history of the thirty years from 1829 to 59, may be summed up by saying that law schools were few and neglected, and that their graduates were but an insignificant minority of the profession. Even the great name and influence of Joseph Story, and the success of the Dane Law School, under his direction, formed but an exception to the rule, without perceptibly modifying the general custom of legal education in private offices. In 1842, if we may trust a table published the following year, there were only 10 law schools in nominal existence in the country, with 19 professors among them, and 384 students. No school had more than three teachers; and some of the most frequented, like the University of Virginia, had only one. Harvard had only two, but they were Judge Story and Simon Greenleaf; and their reputation attracted 115 students, while no other law school in the country had more then 75. The only schools still existing which date from this period are the following: Indiana University, at Bloomington, 1842; Louisiana University, at New Orleans, 1847; Albany Law School, now a branch of Union University, 1851; University of New York, New York City, 1857; Cincinnati Law School, 1833; Ohio State and Union Law College, Cleveland, 1856; Cumberland University, Lebanon, Tenn., 1847. The Law School of the University of Michigan, was established in 1858, and that of Columbia College, in New York (which had previously been established under Chancellor Kent, but discontinued after a brief existence), dates its present existence from the same year. These are now the two largest schools in the country; and the date of their establishment may well be taken as the period when the more rapid growth of law schools began in this country.—Prior to 1858, the schools cannot be said to have exerted much influence upon legal education. Their attendance was very small, and a course in them was regarded rather as an accomplishment which might very well be dispensed with, than as a necessary part of the preparation for the actual work of the bar; but, about this time, several causes contributed to produce a change in the system of legal education. The rapid development of the West, and the number of lawyers required by its business gave a great stimulus to professional education; while it became evident that the traditional method of instruction in offices would not meet the wants of the country, outside of the few great cities. The introduction of codes also, and the change from a very technical practice to an informal one, together with the immense increase of decided cases, and the consequent loss of precision and fixity in the law, all combined to make the old method unpopular and unsatisfactory. An increase of teaching facilities was an evident necessity; and the recent growth of law schools has been the result, rather than the cause, of the change which has come over the whole system of professional education. The school at Ann Arbor was also the first to place its tuition fees at a rate within the means of most students, and thus to encourage a very general disposition on their part to take a course in the law school, as, at least, a part of their professional education. The growth in numbers of this school was entirely unprecedented.—In 1860, as we learn from the United States census of that year, there were in the country twenty law schools, distributed as follows; five in the state of New York, two in Indiana, and one each in the states of Connecticut, Illinois, Kentucky, Louisiana, Massachusetts, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and, in the District of Columbia. But how little dependence can be placed on such statistics may be learned by comparing this list with the one prepared in the same year for the American Almanac, of 1861. This gives nearly the same total number (nineteen), but entirely omits one of the New York schools, and those in Illinois, Missouri, and the District of Columbia, while adding one in each of the states of Virginia, Kentucky, and Mississippi. A comparison of both lists shows about fifteen schools that had what may be called a substantial existence at that time. Nearly all of these remain in full operation at present. Since that time the number has been more than doubled, as will be seen by the table we give below. Some of the most flourishing schools at present have been established since that period; as, for instance, those at Boston, Chicago, St. Louis, Iowa City, and Washington; and most of the older schools have been reorganized and improved.—The following table, will show the remarkable recent increase of these institutions.

Year, and source	Number of schools	Number of teachers	Number of students
1842 (American Almanac, for 1843)	10	19	384
1860 (American Almanac, for 1861)	19	43	1,111
1860 (U. S. census)......	20	....	....
1870 (U.S. Bureau of Education).................	28	99	1,653
1871 (do.)..............	30	129	1,722
1872 (do.)..............	37	154	1,976
1873 (do.)..............	37	158	2,174
1874 (do.)..............	38	181	2,585
1875 (do.)..............	41	216	2,631

It will be noticed that, of late years, the number of teachers has increased much more rapidly in proportion than that of students.

Organization, Course of Study, etc.—Although there is, in the nature of the case, no statutory or other rule prescribing the organization and conduct of American law schools, in general, yet a few prominent features are common to all. The faculty usually consists of lawyers in the active practice of the profession, or judges occupying seats upon the bench; and the time which they give to instruction is usually but a small part of that required by their other duties. Only a few schools have yet succeeded in securing to themselves the constant services of one or more resident professors who devote themselves entirely to the work of instruction in law.—The method of instruction differs in different schools, but is usually either by lectures, or by recitation from text-books. The latter are for the most part the treatises which have been prepared for the use of practicing lawyers, and very few of them are fit for elementary instruction. Still, the method of recitation is so much more effective than the mere delivery of lectures, that the present tendency is to an increased use of text-books. A few teachers have made an effort to combine the two, thus affording a method really adapted to the use of beginners, or have prepared themselves printed synopses of their lectures, or collections of cases, to be placed in the hands of the class for study. Attention has recently been drawn to this subject, and to the great waste of time and labor caused by the previous neglect of all effort toward better teaching. Another defect of the schools may be traced to the circumstances of their origin. As they grew up only to supplement the old method of instruction in offices, they have relied entirely upon such instruction for the training of students in professional habits, and in the details of practice. They have confined themselves exclusively, or almost so, to the task of assisting the student in memorizing rules of law; and a course of introductory lectures like the encyclopædia and methodology of the German schools is almost unknown. Very few schools give their students a view of the law as a single and uniform system. The course is composed of detached fragments, in each of which a single topic of law is treated with no reference to others, and no attempt at consistent treatment by different teachers. The result, too frequently, is, that students go through a course with no conception of the law as a whole, and with no training of that power of legal judgment which is the first requisite of a lawyer.

Admission.—Most of the schools throw open their doors to all comers, and require no particular amount of education for admission. The course is intended to be taken, in all cases, at the very beginning of professional education. None of the schools require any previous knowledge of law, except in cases where students apply for advanced standing.—Two or three of the older schools have, recently adopted a rule by which students are required to present a college diploma, or to pass an equivalent examination. This rule is not to take effect until the next college year, 1877—8; and its operation must be considered as yet an unsolved problem.

Length of Course, and Graduation.—The course of study varies in length, from a single session of five or six months to three years. Only one or two schools, however, have as yet adopted the latter. The majority require either a single year of continuous study, or a course nominally of two years, composed of two annual sessions of five or six months each. The advantage of the latter arrangement is supposed to lie in the opportunity given to students to prosecute their studies in an office between the two sessions. In such cases students are usually admitted to the senior class, upon examination, and are thus enabled to reduce the period of actual attendance to one session; but, as methods of instruction improve, a tendency is manifest to insist more upon the discipline acquired in the school itself, and to make a constant term of attendance a condition of graduation. The usual degree at graduation is that of LL. B. It was formerly given as a matter of course, after the requisite period of attendance; but, at present, an examination is required in every case. This examination, in some schools, is conducted by the faculty; in others, by a committee appointed by the courts of the state, or in some other manner. The extent and rigor of examinations, of course, vary widely in different institutions; but, upon the whole, they are so much more thorough and severe than those to which applicants were subjected under the former system, that they have undoubtedly done much to raise the standard of professional acquirements.—Quite a number of schools have, by law, the privilege of admitting students to the bar of the states in which they are situated. In such cases, it is usually sufficient for a graduate to present his diploma, and take the attorney's oath; though, in some instances, the diploma serves merely as a substitute for examination, and the applicant must also prove moral character, etc. A warm controversy has recently been waged, in New York and some other states, in regard to the value and propriety of this privilege. The schools themselves are by no means unanimous in desiring it. The better opinion seems to be that it should be granted only in cases where the examination for the degree is not left with the faculty alone, but is under the direction of the supreme court of the state, or of some other body whose position will guarantee its fairness and impartiality. Where examinations are so conducted, it certainly seems superfluous to require the graduates to appear again before such committees as are usually appointed for local examinations. As a general rule, no degree but that of LL. B., given on the completion of the usual course, is bestowed by the American law schools. The Yale School, however, now offers the degree of Master of Law (M. L.) to such students as pursue an advanced course for one year after taking the bachelor's degree, and the degree of Doctor of Civil Law (D. C. L.) for a second year of advanced study. The University of Georgia offers the degree of Doctor of Jurisprudence to such of its graduates as have pursued the practice of law with success, and maintained an honorable and virtuous character for seven years after graduation. — The subjoined table contains a list of all the important law schools in the United States:

School or Department	Location	When organized	Years in course	Weeks in year
Univ. of Alabama	Tuscaloosa, Ala.	1875	1½	—
Yale Law School	New Haven, Ct.	1824	2	35
Univ. of Georgia	Athens, Ga	1866	1	51
Ill. Wesleyan Univ.	Bloomington, Ill.	1874	2	36
Union Coll. of Law. Chic. & N.W. Univ.	Chicago, Ill.	1873	2	36
McKendree College	Lebanon, Ill.	1870	2	40
Lincoln University	Lincoln, Ill.	1875	—	—
Indiana University	Bloomington, Ind.	1842	2	38
Iowa College of Law Simpson Cent. Coll.	Des Moines, Ia.	1875	1	36
Iowa State Univ	Iowa City, Ia.	1866	1,2	38
Iowa Wes. Univ.	Mt. Pleasant, Ia.	1871	—	—
Kentucky Univ.	Lexington Ky	1865	2	22
Central Univ.	Richmond, Ky	1874	2	—
Univ. of Louisiana	New Orleans, La.	1847	2	20
Univ. of Maryland	Baltimore, Md.	1812	2	34
Boston University	Boston, Mass.	1872	3	30
Harvard University	Cambridge, Mass.	1817	2	37
Univ. of Michigan	Ann Arbor, Mich.	1858	2	—
Univ. of Missouri	Columbia, Mo	1872	2	21
Washington Univ	St. Louis, Mo.	1867	2	24
Albany Law School	Albany, N. Y.	1851	1	38
Hamilton College	Clinton, N. Y.	—	1	—
Columbia College	New York, N. Y.	1858	2	32
Univ. of N. Y. City	New York, N. Y.	1857	2	36
Rutherford College	Happy Home, N.C.	—	—	—
Trinity College	Trinity, N. C.	1867	2	40
Cincinnati Law School (Cincinnati College)	Cincinnati, O.	1833	2	30
Ohio State & Union Law College	Cleveland, O.	1856	2	39
Wilberforce Univ.	Xenia, O	1872	2	42
Lafayette College	Easton, Pa.	1875	2	29
Univ. of Pennsylvania	Philadelphia, Pa.	1850	2	40
University of S. C.	Columbia, S. C.	1868	2	40
Neophogan Law Sch.	Gallatin, Tenn.	1876	1	39
Cumberland Univ.	Lebanon, Tenn.	1847	1	40
Univ. of Virginia	Charlottesville, Va.	1825	1	39
Sch. of Law & Equity Wash. & Lee Univ.	Lexington, Va.	1871	1,2	—
Univ. of Wisconsin	Madison, Wis.	1868	1	38
Columbian University	Washington, D. C.	1864	2	36
Howard University	Washington, D. C.	1869	2	37
Georgetown Univ.	Washington, D. C.	1870	2	34
National University	Washington, D. C.	1870	2	36

LAWRENCE, Abbott, born in Groton, Mass., Dec., 16., 1792; died in Boston, Aug. 18., 1855. He was associated with his brother in business, but turned his attention also to politics, serving as minister to Great Britain from 1849 to 1852. His chief claim to remembrance in the educational world was his founding of the Lawrence Scientific School, at Cambridge, in 1847, for which he gave $50,000.

LAWRENCE, Amos, brother of the preceding, a merchant, born in Groton, Mass., April 22., 1786; died in Boston, Dec. 31. 1852. After a serious illness in 1831, he retired from active business, and devoted the remainder of his life to acts of benevolence, expending in this way over $600,000. Among the educational institutions which were the objects of his bounty, may be enumerated the following: Williams College, Mass., to which he gave nearly $40,000, the Lawrence Academy of Groton, Wabash College, Ind., Kenyon College, Ohio, and the theological seminary at Bangor, Me.

LAWRENCE UNIVERSITY OF WISCONSIN, at Appleton, Wis., chartered in 1847, is under Methodist Episcopal control. It is supported by tuition fees, etc., and the income of an endowment of about $60,000. It has chemical and philosophical apparatus, a cabinet of minerals, botanical specimens, etc., and a library of nearly 8,000 volumes. The regular tuition fees vary from $15 to $21 a year. The university comprises both the College and the Institute, and consists of seven departments, as follows: (1) a preparatory department; (2) an academic department; (3) a commercial school; (4) a conservatory of music; (5) a school of drawing and painting; (6) a juvenile department; and (7) the college (opened in 1853), which has a classical, a scientific, and a civil engineering course. Both sexes are admitted. In 1875—6, there were 14 instructors. The number of students was as follows: collegiate, 102 (58 males and 44 females); preparatory, 97; academical, 38; commercial, 45; music, 33; drawing and painting, 14; juvenile, 29; total, deducting repetitions, 333 (185 males and 148 females). There were 173 *alumni* (114 males and 59 females). The Rev. W. H. Sampson, A. M., was principal of Lawrence Institute from 1848 to 1853. The presidents of the university have been as follows: the Rev. Edward Cooke, D. D., 1853—61; the Rev. R. Z. Mason, LL. D., 1861—5; and the Rev. George M. Steele, D. D., the present incumbent (1876), appointed in 1865.

LEBANON VALLEY COLLEGE, at Annville, Pa., under the control of the United Brethren in Christ, was founded in 1867 by the East Pennsylvania Conference of that church. It has an endowment of $20,000, but is chiefly supported by several conferences of the church, and by contributions and tuition fees. The regular fees are from $40 to $47 a year. The college has a beautiful campus of about seven acres, two fine buildings, a cabinet, and a library of over 1,200 volumes. The curriculum embraces three courses: a classical, a ladies', and a scientific course. There is also a preparatory department. In 1875—6, there were 6 instructors, and 116 students (classical course, 30; ladies' course, 3; scientific course, 83), of whom 84 were preparatory. The presidents have been as follows: T. R. Vickroy, 1867—71; Lucian H. Hammond, 1871—6; and D. D. De Long, the present incumbent, elected in 1876.

LECTURES, or **Lecture System,** a method of giving instruction by formal expositions, generally written out and read to the learners. Hence the term *lecture* (from the Latin, meaning *reading* or *something read*). Lectures are, however, quite often extemporaneous, or delivered without previous preparation of the language. The lecture differs from the lesson chiefly in dispensing with the ordinary processes of the recitation room—question and answer, repetition, etc. The learners simply listen, or take notes, while the lecturer reads or speaks, with or without illustrations by means of the blackboard, maps, pictures, apparatus, etc.—Lectures, as a system of instruction, are chiefly depended on in higher education—in colleges and universities, also in technical, scientific, and professional schools, because the students are supposed to have acquired a considerable maturity of intellect, enabling them not only to receive knowledge without exercises specially designed to awaken attention or stimulate the understanding, but to exercise their own faculties in arranging it in their minds for use,—in other words, co-ordinating it with their previously acquired knowledge. They are, besides, supposed to appreciate the importance of the information communicated, so as not to need any special stimulus to self-activity. In elementary instruction, all these conditions are reversed; and, therefore, the lecture system is inappropriate at that stage. In middle schools (secondary instruction), lectures may be used with good effect, in connection, or alternation, with the ordinary recitation processes. When the material has been methodically arranged, and when the statements are definite and precise, the language simple and forcible, and the style earnest, lectures may be made to subserve a very useful purpose. (See HISTORY.)

LEHIGH UNIVERSITY, at South Bethlehem, Pa., chartered in 1866, is under Protestant Episcopal control. It was founded by Asa Packer, of Mauch Chunk, who, in 1865, appropriated $500,000 and suitable grounds for the purpose. Tuition is entirely free. There are three fine buildings, besides houses for the president and professors. The library contains 2,000 volumes. The university has a well-equipped observatory, a museum, and collections in natural history. It comprises five schools: (1) general literature; (2) civil or statical engineering; (3) mechanical or dynamical engineering; (4) mining and metallurgy; (5) chemistry. The courses are each of four years, except that for the degree of Engineer of Mines, which requires four years and a half. The studies of the freshman year and of the first half of the sophomore year are the same in all the courses. This institution was originally designed to impart a technical education, and the school of general literature (similar to the ordinary college course) was added subsequently. In 1875—6, there were 8 professors, 6 other instructors, and 113 students. The Rev. John M. Leavitt, D. D., is (1876) the president.

LELAND UNIVERSITY, in New Orleans, La., chartered in 1870 and opened in 1873, is under Baptist control. It was especially designed for colored youth, but no one can be excluded on account of race, color, sex, or religion. It is supported by contributions, tuition fees, and the products of 10 acres of cultivated land. The buildings and grounds are valued at about $75,000, toward which the Freedmen's Bureau contributed $17,500, and benevolent individuals and churches the residue. The cost of tuition is $1 per month, which is remitted to ministers and licentiates. An opportunity is afforded students to support themselves in part by labor on the farm. The university has an academic and a college preparatory course, of three years each, a college course of four years, and a theological department. In 1874—5, there were 4 instructors and 96 students (63 male and 33 female), of whom 5 were in the college preparatory course, and 16 were pursuing theological studies. The Rev. Silas B. Gregory was the first president, who held office one year, and was succeeded by the Rev. L. Bartlett Barker, A. M., the present incumbent.

LESLIE, Sir John, a celebrated natural philosopher, teacher, and author of scientific works, born in Largo, Scotland, April 16., 1766; died in Coates, Fifeshire, Nov. 3., 1832. While a boy, his strong inclination for natural science was shown, and led to his entrance into the university of St. Andrews, in 1779. He afterwards went to the Edinburgh Divinity Hall, but devoted his time there to the study of the sciences, particularly chemistry. In 1788, he accepted the position of tutor in the Randolph family of Virginia; but, in 1790, returned to London, where he attempted to establish himself as a lecturer on natural philosophy. Failing in this, he became a tutor in the family of Mr. Wedgewood, at Etruria, Staffordshire; and while traveling in that capacity on the continent, made a translation of Buffon's *Natural History of Birds* (1793), and published an *Experimental Inquiry into the Nature and Propagation of Heat* (1804). In 1805, after much opposition on the part of the clergy of Edinburgh, he was elected professor of mathematics in the university of that place, succeeding Prof. Playfair; and, in 1819, on the death of the latter, again succeeded him, as professor of natural philosophy. Shortly after his election, in 1805, he began the publication of his *Course of Mathematics*, followed, in 1823, by one volume of his *Elements of Natural Philosophy*. The latter was never completed. Shortly before his death, in 1832, he was created a knight of the order of Guelph. As an able and versatile writer in almost every department of science, and an inventor of philosophical instruments, his merit is generally acknowledged. The invention of a differential thermometer, a hygrometer, and a photometer, also of a process of artificial congelation, and a method for freezing mercury, are some of the results of his experimental labors. His chief publications, in addition to those mentioned, are *An essay on the Resolution of Indeterminate Equations* (Edin., 1788); *Philosophy of Arithmetic* (1817); *Progress of Mathematical and Philosophical Science during the 18th Century*, the fifth dissertation in the *Encyclopædia Britannica*.

LEWIS, Dio, an American physician and author, born in Auburn, N. Y., March 3., 1823. He was educated at Harvard, and practiced medicine at Port Byron and Buffalo. While in the latter place, he published a medical magazine in which he advocated the substitution of physical exercise for drugs, in the prevention and cure of disease. In 1863, he established in Boston an institution for the training of teachers according to his new system of physical education. The necessity of such education he has advocated for many years, and sought to introduce it into the public-school system of the United States. Shortly after the destruction of his school buildings by fire, in 1868, he gave up his school, and devoted himself to lecturing, principally on hygiene and temperance. His published works are, *New Gymnastics* (Boston, 1862); *Weak Lungs, and how to make them strong* (Boston, 1863); *Talks about People's Stomachs* (1870); *Our Girls* (New York, 1871); and *Chats with Young Women* (New York, 1874).

LEWISBURG, University at, an institution at Lewisburg, Pa, under Baptist control, was founded in 1847. It is supported by tuition fees, room rent, and the income of an endowment of $130,000. Its library contains about 5,000 volumes. The institution has a cabinet of geology and mineralogy, collections in natural history, and philosophical and chemical apparatus. The cost of tuition in the collegiate department is $36 a year. This department has a classical and a scientific course. Connected with the university is a preparatory department, an English academy, and a female institute. In 1875—6, the collegiate department had 6 instructors. The number of students was 118; namely, collegiate, 66; preparatory, 31; academy, 21. The presidents of the university have been the Rev. Howard Malcom, D. D., 1851—8; and the Rev. Justin R. Loomis, LL. D., the present incumbent, appointed in 1858.

LEWIS COLLEGE, at Glasgow, Mo., founded in 1866, is under Methodist Episcopal control. It is supported by tuition fees, which vary from $30 to $40 per year, and by the liberality of its founders, the Lewis family of Howard county. It has a library of about 3,000 volumes, and comprises a primary, an academic, a preparatory, and a collegiate department, the last having a classical and a scientific course. Opportunity is also afforded for theological and musical instruction. Both sexes are admitted. In 1874—5, there were 5 instructors and 88 students. The presidents have been as follows: the Rev. D. A. McCready, (2 years); the Rev. Joseph Barwick, A. M. (2 years); the Rev. L. M. Albright, A. M. (1 year); the Rev. James C. Hall, A. M., the present incumbent, appointed in 1871.

LIBERAL EDUCATION, literally, that which is suited to the condition and wants of a freeman or a gentleman, that is, extending beyond the practical necessities of life; hence, contrasted with a *practical education*, or that which is designed to fit for mechanical or business pursuits. A liberal education embraces within its scope instruction in all those branches which collectively are called *the humanities* (q. v).

LIBERIA, a republic of western Africa; area, 9,500 sq. m.; population, estimated at 718,000, of whom about 700,000 are uncivilized negroes. The settlement of Liberia was commenced in 1822, by liberated slaves from the United States, under the auspices of the American Colonization Society; and, in 1847, it was proclaimed a free and independent state. Its constitution has for its model that of the United States. Of the numerous tribes comprising the native population the Mandingos are the most remarkable. They all possess considerable intelligence, and not a few of them are educated. They are found on the whole eastern frontier of the republic, and extend far into the interior of Africa. Like most of the interior tribes of Africa, they are Mohammedans, and have schools and mosques in every large town. They read and write, and many speak, the Arabic language. Besides the Mandingos, the only tribe that have reached any degree of culture are the Veys, on the west coast. They have a syllabic alphabet, invented by themselves. A mission school has been established among them at Totocarch, by the Protestant Episcopal Church of the United States. There were also, in 1872, 15 day schools, under the control of the Methodist Episcopal Church, and a training school for Baptist missionaries, at Virginia. A regular system of public schools has been organized, comprising elementary and high schools, and a college. The statistics are very meager in regard to the common schools. The county of Mesurado had, in 1870, 36 public schools, with 37 teachers and 1,155 pupils.—See STOCKWELL, *The Republic of Liberia* (N. Y., 1868), and BLYDEN (a negro professor in Fourah Bay College, Sierra Leone), *The Republic of Liberia, its Status and its Fields*, in the *Methodist Quarterly Review* (1872).

LIBRARIES constitute one of the most important instrumentalities for stimulating the intellectual improvement of the people, as well as for the mental and moral training of pupils in schools. This has been recognized in the legislation of many of the states of the American Union, by making provision for supplying the schools and school-districts with libraries of interesting and useful books. In 1827, Governor Clinton, of New York, recommended the establishment of school-district libraries; and, in 1835, a law was passed by the legislature of that state which permitted school-districts to raise money by tax for the support of libraries. In 1838, further provision was made by authorizing an annual appropriation of $55,000 from the general school fund for this purpose, on condition that the districts would raise an equal sum. In 1875, the legislature of this state reduced the appropriation to $50,000. Massachusetts enacted a permissory law in 1837, and, in 1842, granted a premium of $15 to each district which raised an equal sum by taxation. Maine, Connecticut, New Jersey, Ohio, Michigan, Illinois, Wisconsin, and California have passed acts similar to that of New York. These provisions have, however, been found inadequate; and, in some of the states, township libraries have taken their place. Such libraries, administered as a part of the common-school system, have been established in Michigan, Indiana, and Wisconsin; but the results are said not to be wholly satisfactory. In Massachusetts, the library has been separated from the school system, being made public, or open to all. In 1851, a law was passed authorizing "cities and towns to establish and maintain public libraries," and the system thus inaugurated has proved eminently successful. In 1869, there were 58 public libraries in the state, wholly or partly maintained by taxation. At the present time, there are, probably, more than three times that number. "Public libraries," says the U. S. Commissioner of Education, in his report for 1874, "are now universally regarded by school officers and friends of education as an indispensable complement to our system of free schools, and no educational report can now be considered complete which does not recognize their importance."

The value of a school library will depend upon the character of the books of which it is composed, and the uses to which it is applied. A large and expensive collection of books is not needed; but the books should be instructive and interesting to children, so that through their perusal they may not only obtain useful information, but imbibe a taste for reading. By this means, an antidote may, in part at least, be applied to the influence of the trashy, exciting, and sensational literature, which so greatly abounds at the present time, and which is so apt to corrupt both the minds and morals of the young. "A library," says *How to Teach* (N. Y., 1874), "is the indispensable supplement to the systematic mental instruction given in the class-room. If, for instance, care be taken and opportunities sought during the lessons in geography, history, or in any of the departments of science, to introduce some little book from the library, and to read a few interesting paragraphs illustrating the lesson, a brief notice and commendation of the book at the close of the exercise, with a few hints as to how best to read it, will utilize many a valuable work that might otherwise remain untouched upon the shelves..... A teacher has failed in one of the most important of all his functions, if, being in possession of a good school library, he has not fixed, in at least some of his pupils, the habit and love of self-culture, by leading them to become habitual readers."

LICENSE, Teacher's, a legal permission to give instruction, generally in a public school. This license is usually conferred after examination, and attested by a certificate, either temporary or permanent, which is evidence to employing school boards that the holder is a *qualified teacher*, sometimes called a *certificated teacher*. The object of such a license to teach is to protect the interests of the community against the evils arising from the employment of incompetent persons by those who might not be able to test the qualifications of applicants, or who might, from favoritism or corrupt motives, be willing to employ as teachers persons not possessing the requisite qualifications. In the United States, the requirement that all teachers should be duly examined and licensed previous to appointment is almost universal. The practice in regard to the mode of examination, and the forms and grades of the certificate, varies considerably in the different states, for information in regard to which, see the titles of the states, respectively. In all an unqualified attestation of moral character is required, in addition to literary and professional qualifications. (See Walsh, *The Lawyer in the School-Room*, N. Y., 1871, s. v. *The Law as to the Teacher's Morality*.) State certificates, that is, certificates issued by state boards of education or state superintendents, entitle the holders to teach in any part of the state without an examination before county, town, or district boards or officers. Such certificates are, however, usually overruled by city boards of education, who make an examination and license by their own officers—usually the city superintendent—a condition of employment. In some states, the standard for a license is fixed by the state board of education or by the superintendent; in others, each locality fixes its own standard. This gives rise to a great want of uniformity, which has often been inveighed against as prejudicial to the interests of teachers and of the profession. American teachers have been, and still are, to a diminished extent however, subjected to great wrong and injustice by being obliged to pass examinations before incompetent persons, that is, persons who have neither scholarship nor professional knowledge, either theoretical or practical. The examiners in the rural districts are rarely teachers, and hence cannot but imperfectly determine the teacher's qualifications, except, indeed, elementary scholarship and moral character. At the meeting of the National Educational Association, in 1872, this subject was discussed, and the following decided upon as the proper conditions for awarding teachers' certificates: (1) a comprehensive system of state, city, county, and town boards of examination; (2) such boards to be composed of school superintendents and professional teachers; (3) a graded series of certificates from life diplomas down to annual certificates, to be granted only upon actual examination; (4) legal recognition by each state of professional certificates and normal school diplomas issued in other states. In the state of New York, the superintendent of public instruction can issue his certificate only to those who have been found on examination qualified to receive it; and it is his duty to appoint examiners, at such times and in such places, as he may deem necessary, for the purpose of examining candidates. (See New York.)

The English *Elementary Education Act* (1870) provides that "before any grant is made to a school, the Education Department must be satisfied that the principal teacher is certificated;" and that "teachers, in order to obtain certificates, must be examined, and must undergo probation by actual service in school;" that is, "after successfully passing their examination, they must, as teachers continuously engaged in the same schools, obtain two favorable reports from an inspector, with an interval of one year between them; and if the first of these reports be not preceded by service of three months (at the least) since the examination, a third report, at an interval of one year after the second report, is required; if the second (or third) report is favorable, a certificate is issued. Teachers under probation satisfy the conditions which require that schools be kept by certificated teachers." The Scotch *Education Act* (1872) provides that "no person shall be appointed to the office of principal teacher in a public school, who is not the holder of a certificate of competency." Those who hold university degrees are entitled to receive the certificate without further examination in the studies in which they were examined for the degree. Too great laxity seems to exist in the granting of these certificates; as appears from the following statement of the *Educational News* (Edinburgh, June 3., 1876): "A gradual deterioration in the value of certificates has been going on for the last twenty years, under pretence of making it the badge of practical skill rather than of literary attainments and scientific knowledge of the principles of *teaching*; and so thorough has been the transformation, that it now affords no evidence whatever of the possession of knowledge, and next to none even of practical skill;" which strong statement is based on the fact, as alleged, that "the Education Department seems bent on interfering with the intentions of parliament in this matter by granting certificates 'without examination,' although the act unmistakably makes examination a necessary condition of granting a certificate."—In Austria, most of the teachers are compelled to spend four years in the normal schools, after which they are required to pass an examination before an independent commission appointed by the government, before they can obtain a license to teach. In France, the teachers of private as well as of public schools are required to obtain a license by passing an examination before the governmental officers; and their schools are also subject to official supervision. In the German states, persons are prohibited from keeping schools without being licensed; and to obtain a license are required to pass an examination; upon which they receive certificates showing the grade of school they are qualified to teach; and they are interdicted, under a severe penalty, from issuing a prospectus for any higher school. Similar legal provisions exist in Sweden, Denmark, and some other European countries.

LIEBER, Francis, a noted publicist and teacher, born in Berlin, March 18., 1800; died in New York, Oct. 2., 1872. He entered the university of Jena, in 1819, but left it in 1821; and, after traveling on foot through Switzerland, embarked at Marseilles for Greece, where he entered the Greek army as a volunteer. Returning to Rome, he became an inmate of the family of Niebuhr, the historian, then Prussian ambassador; and wrote there, in 1822, an account of his sojourn in Greece, which was published in Leipsic (1823). He returned to Berlin, and entered the university of Halle, but was arrested and imprisoned at Köpenick, where he wrote a number of poems, which, upon his release, at the intercession of Niebuhr, were published under the name of Franz Arnold. Being threatened with another arrest, he left Germany, in 1825, and fled to England, where he supported himself for a year as a private teacher. While in England, he contributed to German periodicals, and wrote, in German, an article on the Lancasterian method. In 1827, he came to the United States, lectured on history and politics, and, shortly after, began, at Boston, to edit the *Encyclopædia Americana*, which was published, in 13 volumes, in Philadelphia (1828—32). By invitation of the trustees of Girard College in Philadelphia, he furnished a plan of education and instruction for that institution, and afterwards went to reside in that city. In 1835, he was appointed to the chair of history and political economy in the South Carolina College, at Columbia, a position which he held till 1856. These were the most fruitful years of his life. Here he wrote his *Manual of Political Ethics* (Boston, 1838—9), commended by Kent and Story, and adopted by Harvard College as a text-book; *Legal and Political Hermeneutics* (Boston, 1839); a translation of Ramshorn's *Latin Synonyms* (1839); *Great Events described by Great Historians* (N. Y., 1847); essays on the *Use of the Study of Latin and Greek, as Elements of Education*; on the *Study of History and Political Economy as branches of a superior education*; on *Laura Bridgman's vocal sounds*; *Civil Liberty and Self-Government* (Phila., 1853); and numerous other essays, letters, and reports. In 1857, he was appointed to the chair of history and political science in Columbia College, N. Y., and remained in that position till his death. The labors of Dr. Lieber were of great importance, and their value has been fully recognized both in the United States and in Europe. Although passing most of his life in the professor's chair, his commanding ability gave him a reputation such as is usually the reward of long public service.

LILY, William, a celebrated English scholar and teacher, the friend of Erasmus and Sir Thomas More, was born at Odiham, Hants, in England, in 1466, and died in 1523. He was educated at Oxford University, and, soon after arriving at manhood, traveled in the East to obtain a knowledge of the Greek language, and subsequently studied for a time at Rome, and also at Paris. On his return to England, he acquired a very high reputation for scholarship, being the first teacher of Greek in London; and, in 1512, he was appointed by Dr. John Colet, dean of St. Paul's church, London, high master of St. Paul's school, then recently established through the dean's munificence. This position he filled until his death. He published several educational works, but is chiefly noted for his Latin grammar (*Brevissima Institutio seu Ratio Grammatices Cognoscendæ*, 4to, London, 1513), one of the most celebrated of text-books. In the compilation of this work, Colet, Erasmus, and Cardinal Wolsey had a share; the English rudiments being written by Colet, the preface to the first edition by Wolsey, and the Latin syntax chiefly by Erasmus. This book was thus the joint production of four of the greatest scholars of the age. Few school books have had so long a career, or have passed through so many editions, being used to this day in St. Paul's school. King Henry VIII. wrote an introduction to grammar, making Lily's grammar the basis; he also caused a law to be enacted prescribing this as the grammar to be exclusively used in all the schools of the kingdom; and, accordingly, it remained the accepted grammatical standard in English schools for more than three centuries. Hence it bore on its title-page, *Quam solam Regia Majestas in omnibus scholis docendam præcepit.* This grammar is also noteworthy as being the basis of the first English grammars.—See FULLER, *History of the Worthies of England* (1622); SAMUEL KNIGHT, *Life of Dr. John Colet* (1724); DIBDIN, *The Biographical Decameron* (London, 1817); JORTIN, *Life of Erasmus* (1758—60). (See also GRAMMAR, ENGLISH.)

LINCOLN COLLEGE, at Greenwood, Mo., was founded, in 1869, by the United Presbyterians. The grounds comprise five acres, reserved for the site of a college when the town was laid out. The building was erected through the efforts of the Rev. Randal Ross, A. M., who has been the president of the board of directors from the first. The college is supported by tuition fees of $30 a year. It has a classical course of four years, and a scientific course of three years; both sexes are admitted. In 1875—6, there were 5 instructors and 75 students.

LINCOLN UNIVERSITY, at Lincoln, Ill., under the control of the Cumberland Presbyterians, was organized in 1867, and chartered in 1872. The value of its buildings, grounds, and apparatus is $175,000; the amount of its productive funds, $834,000. The libraries contain 22,000 volumes. Both sexes are admitted. There is a preparatory, a classical, a Latin-scientific, a scientific, and a select course. A theological department has also been organized. In 1873—4, there were 12 instructors and 386 students (332 preparatory and 54 collegiate).

LINCOLN UNIVERSITY, at Oxford, in Chester Co., Pa., opened in 1856, is under Presbyterian control. It is especially, but not exclusively, designed for colored students. The value of its buildings, grounds, and apparatus is $125,000. The grounds include 80 acres, and contain four university buildings and four professors' houses. The library contains 3,500 volumes. The university has valuable philosophical apparatus and a mineralogical cabinet. It has a collegiate department, a normal, preparatory, and business department, and a theological, a law, and a medical department. In 1874—5, there were 10 instructors and 147 students (74 collegiate, 57 preparatory, and 16 theological. The Rev. Isaac N. Randall, D. D., is (1876) the president.

LINDSLEY, Philip, an American educator, born at Morristown, N. J., in 1786; died at Nashville, Tenn., in 1855. After graduating at the College of New Jersey, in 1804, he was for three years tutor in that institution. In 1813, he became professor of languages, and, in 1817, vice-president of the college. In 1823, he was chosen president of the institution, but he declined. In 1824, he accepted the thrice-tendered presidency of the university of Nashville, which, through his efficient administration, attained a very high rank among American colleges. So great was the reputation which he acquired in that position, that no less than ten different colleges offered him the presidency. He retired in Oct. 1850, and spent the last four years of his life at New Albany, teaching part of the time, in the theological seminary of that town. His works have been edited by L. J. Halsey (Phila.).

LING, Peter Henrik, a Swedish poet, and the founder of a system of gymnastics for the cure of disease, was born in Ljunga, Nov. 16., 1776, and died in Stockholm, May 3., 1839. Under the name of *kinesipathy* (*movement cure*), his system has been put into practice to some extent in other countries, but, like many similar discoveries, has not fully answered the expectations of its too sanguine advocates. In 1813, the Royal Central Institution of Stockholm was established for the purpose of carrying out this system, Ling being appointed director. His *Elementary Principles of Gymnastics* was published after his death (Stockholm, 1840).

LINGUISTICS. See LANGUAGE.

LOCKE, John, an illustrious English philosopher, born at Wrington, in Somersetshire, Aug. 29., 1632; died at Oates, in Essex, Oct. 28., 1704. His education began at Westminster School, from which he passed, in 1651, to Christ Church, Oxford, where he graduated in 1658. He applied himself to the study of medicine with such success as to win the special approbation of Dr. Sydenham, the greatest medical authority of his time. In 1664, he went to Berlin, as secretary to the British envoy, Sir William Swan, but returned within a year to pursue his studies at Oxford.

His perplexity, at this time, as to the choice of a profession, was very great, three being open to him. A preferment in the church was offered him by the duke of Ormond; inducements to continue in diplomatic service, either in Spain or Germany, were, also, made to him; while his own inclinations were toward the practice of medicine, for which he had shown special aptitude. While engaged in the study of experimental philosophy, in connection with his medical studies, he formed the acqaintance of Lord Ashley, afterwards earl of Shaftesbury. This nobleman's life is believed to have been saved by Locke's skill; and at this time an intimacy sprung up between them, which led to Locke's taking up his residence at Lord Ashley's house in London, where he applied himself to the study of politics and philosophy. There he met the earl of Northumberland, the earl of Halifax, the duke of Buckingham, and others of the most eminent persons of that day. In 1668, he accompanied the earl of Northumberland on a tour in France, and, on his return, was employed by Lord Ashley, then chancellor of the exchequer, to draw up the constitution of the province of Carolina. In 1670, he began to form the plan of his great work, the *Essay concerning the Human Understanding*, though this was not published till twenty years later. In 1675, he visited France for the benefit of his health, where, at Montpellier, he became acquainted with the earl of Pembroke, to whom, many years after, he dedicated his *Essay*. He returned to England in 1679; but, in 1682, when the Earl of Shaftesbury who had been charged with treason, left the country, Locke accompanied him, taking up his residence in Amsterdam, where, in conjunction with Limborch, Le Clerc, and others, he founded a literary society for the weekly discussion of important questions. In 1686, he published in French a *New Method of a Commonplace Book*, and, in 1688, his letter *On Toleration*. In the latter year, he returned to England, in the fleet which conveyed the princess of Orange, and shortly after (1690) published his celebrated *Essay*. The success of this work, largely aided by the violence with which it was attacked, was very great, six editions appearing in 14 years, besides translations of it into Latin and French, which gave the author a European reputation. In 1693, appeared his *Thoughts Concerning Education*. This work, the value of which has been variously estimated by distinguished critics, is of special interest to educators, inasmuch as it was the first attempt, in England, to deal with the subject of education in a comprehensive and practical way. It was written as a guide to the education of a young gentleman, in this respect resembling Montaigne's essay on the same subject. Indeed, Locke's work was an amplification, through in no sense an imitation, of Montaigne's. The subject is considered from the beginning, and rules were laid down not only for mental and moral development, but for physical training, Locke's education as a physician especially qualifying him for the latter. Some of his recommendations in this respect, have, of course, become antiquated by the progress made in physiology and hygienic knowledge since his time; but, as a whole, it remains, to this day, a trustworthy guide. His views in regard to early influences, the force of habit, manners, etc., do not differ materially from those now entertained. In regard to the training of children, his observations concerning the time at which it should be begun, the means to be employed, and the objects to be kept in view, are, in all essential respects, in accordance with the views now generally held. Many objections to Locke's teachings have been made by modern educators. For instance, he has placed himself on record as entirely opposed to corporal punishment, except for obstinacy; and even for this he would have the punishment so ordered that "the shame of the whipping and not the pain, should be the greatest part of the punishment." In the controversy which springs up periodically on this subject, therefore, Locke's great authority, as a guide to educators, would probably, by one side, be seriously questioned. A more serious objection is, that the motive presented to children for doing right — the approbation of their elders — is not a sufficiently exalted one. It may be said, however, in defense of Locke, that it was not his intention to present a psychological theory of education, but a practical plan for educating the young. The reasoning faculty in children is very rarely developed sufficiently to make an explanation of motives of any use in educating them. Whipping being discarded by Locke, there seemed to him only one way to incline children to do right — that of rewards, or of appealing to their love of approbation. He carefully guards himself here, by explaining that the reward or the approval must not be given for any "particular performance that they show an aversion to, or to which they would not have applied themselves without that temptation". "But", he says, "to make the sense of esteem or disgrace sink the deeper, and be of the more weight, other agreeable or disagreeable things should constantly accompany these different states; not as particular rewards and punishments of this or that particular action, but as necessarily belonging to, and constantly attending, one, who, by his carriage, has brought himself into a state of disgrace or commendation." It is doubtful whether any more powerful agent can be brought to bear practically in influencing the child. It has, indeed, been doubted whether any higher motive for doing right, can be presented to the majority of adults, than this of the approbation of their fellows, which is usually known as public opinion. To attempt to influence children, therefore, exclusively by higher motives, would hardly be practical, or productive of benefit. That Locke was not forgetful of these higher motives, however, the following words will show: "Concerning reputation, I shall only remark this one thing more of it; that though it be not the true principle and measure of virtue (for that is the knowledge of a man's duty, and the satisfaction of it is to obey his Maker, in following the dictates of that light God has given him, with the hopes of acceptation and reward), yet it is that which comes nearest to it, and, being the testimony and applause that other people's reason, as it were, by a common consent, gives to virtuous and well-ordered actions, it is the proper guide and encouragement of children, till they grow able to judge for themselves, and to find what is right by their own reason." His disapproval of public schools, also, is not in accordance with our modern view, but of this there are two extenuating circumstances, — one, the fact that his essay was intended to be used in the education of a young nobleman; the other, that the public schools, in Locke's day, were so inferior to those of to-day, that his censure can hardly be construed as applying to the latter. His slight opinion of the classics, also, must be modified in our estimate of it, by the same fact mentioned above, that it was the education of the man of affairs that he had in view, and not that of the scholar. His recommendations in regard to the study of natural philosophy, interspersed, as they are, with theological considerations and directions concerning "spirits", of course, show the confusion of mind in regard to this subject, prevalent in his day, and furnish no guide for that branch of study at the present time. His high opinion of the value of history, civil law, English law, style, and letters will, by many, be thought to show the bias produced by his long association with them, and the station of the pupil for whom his treatise was intended; while his depreciation of music, as part of a liberal education, is accounted for by the low state of that art during his time, and will hardly be accepted now as a true statement of its merits. Notwithstanding the objections which can be urged against Locke's method, owing to the changed condition of society, the great progress that has been made in many branches of learning, and the creation of new ones, his treatise remains a memorable contribution to the literature of the great subject of which he treats, and a landmark in its history. That it is not without errors and short-comings, and that he was conscious of them, his own concluding words will show: "Though I have now come to a conclusion of what obvious remarks have suggested to me concerning education, I would not have it thought that I look on it as a just treatise on this subject. There are a thousand other things that may need consideration; especially if one should take in the various tempers, different inclinations, and particular defaults that are to be found in children; and prescribe proper remedies. * * * * Each man's mind has some peculiarity, as well as his face, that distinguishes him from all others; and there are possibly scarce two children who can be conducted by exactly the same method. * * * But having had here only some general views in reference to the main end and aims in education, and those designed for a gentleman's son, whom, being then very little, I considered only as white paper or wax to be molded and fashioned as one pleases, I have touched little more than those heads, which I judged necessary for the breeding of a young gentleman of his condition in general, and have now published these my occasional thoughts, with this hope, that, though this be far from being a complete treatise on this subject, or such as that every one may find what will just fit his child in it, yet it may give some small light to those whose concern for their dear little ones makes them so irregularly bold, that they dare venture to consult their own reason in the education of their children, rather than wholly to rely upon old custom."

L'HOMOND, Charles François, a French priest and educator, was born, in 1727, at Chaulnes; died at Paris, in 1794. He was for some time at the head of the *Collége d'Inville* at Paris, and from there passed to the *Collége du Cardinal Lemoine* where he was for twenty years teacher of the sixth class. After becoming *professor emeritus*, he devoted his time to the compilation of school books, many of which attained a very wide circulation. His work *De viris illustribus urbis Romæ*, is still in extensive use, not only in France, but in the United States, England, Germany, and some other countries, and is regarded by many distinguished educators as the best Latin reader that has ever been issued. In 1860, his native town erected a statue to him. (See LATIN LANGUAGE.)

LOMBARD UNIVERSITY, at Galesburg, Ill., under the control of Universalists, was founded as the Illinois Liberal Institute, in 1851, and chartered as a university, in 1853. It is supported by the income of an endowment of $100,000, and by tuition fees. The regular fees vary from $15 to $33 per year. It has a large and valuable cabinet, and libraries containing over 4,000 volumes. The university embraces two departments of instruction,—the collegiate and the preparatory. The collegiate includes three different courses of study,—the classical, the scientific, and the literary course, on the completion of which the degrees of Bachelor of Arts, Bachelor of Science, and Laureate of Arts are, respectively, conferred. Both sexes are admitted. In 1875—6, there were 9 instructors and 94 students, of whom 25 (7 classical, 13 scientific, and 5 literary) were in the collegiate department, and 69 (24 pursuing ancient and modern languages, and 45 English studies), in the preparatory department. The presidents have been as follows: the Rev. Paul R. Kendall, A. M., 1851—6; Prof. J. V. N. Standish (acting), 1856—7; the Rev. Otis A. Skinner, D. D., 1857—9; the Rev. J. P. Weston, D. D., 1859—73; Prof. Wm. Livingston (provisional), 1873—5; and the Rev. Nehemiah White, Ph. D., the present incumbent, appointed in 1875.

LONDON, University of, was created by royal charter bearing date Nov. 28., 1836. It was founded on the same principles of liberality as University College, London (q. v.), out of which it sprung. By an oversight, the first charter was granted only during "royal will and pleasure", and would have expired six months after the death of the king. A new charter, therefore, not so determinable, was granted in the following year by Queen Victoria. The early constitution of the university bore a rough resemblance to that of the universities of Oxford and Cambridge, there being, on the one hand, colleges or teaching bodies, and, on the other, a university to test the quality of the teaching and to grant degrees accordingly. There was, however, this capital difference, that, in the University of London, the colleges, instead of being all in one locality, were scattered over the country, some of them being situated even in distant colonies. In the earlier years of the university, every candidate, before presenting himself at the examination for his degree, was obliged to furnish a certificate showing that he had studied at one of the affiliated colleges for two years subsequent to his matriculation. In 1858, these affiliated institutions, which alone had the right to give certificates for degrees in arts and laws, comprised, in addition to the universities of the United Kingdom and of Sydney, 37 other colleges and schools. The most important of these were University College and King's College, London, and Owens College, Manchester (q. v.). Most of the remainder were theological colleges in connection with the Roman Catholics, the Independents, the Baptists, and other denominations.

The government of the university is in the hands of a senate, consisting of a chancellor, a vice-chancellor, and 36 members, or *fellows;* all of whom are appointed by the Crown for life or until resignation. All by-laws and regulations, however, have first to be submitted to the approval of one of her Majesty's principal secretaries of state. It had been proposed, as early as 1840, to give the graduates some influence in the management of university affairs. This scheme, taken up in earnest in 1848, was agitated year after year, until a new charter was obtained in 1858. This charter formed the graduates, then about 1,000 in number, into a corporation, giving them the right to meet in convocation and, to intervene by discussion and opinion in university affairs, to nominate one-fourth of the senate, and the right, along with the senate, of accepting any new charter or of surrendering a charter. The charter also gave the right to confer new degrees in science, in music, or in any department of knowledge whatever, theology always excepted. It is expected that the degrees in music will be instituted shortly.

Whilst the draft charter was under consideration, in the earlier half of 1857, a new clause was introduced by the senate which provoked great excitement and strong opposition from all the affiliated colleges except one, and from a decided majority of the graduates. According to this 36th clause, all persons, wherever educated, were to be allowed to compete for degrees, other than medical. The senate, notwithstanding the opposition they met with from without, persevered in their course, and the new charter came into force on April 9., 1858. The certificate system, in fact, had not, in many cases, been working well; many whom the university would gladly have welcomed as candidates, were kept away; and the university was prevented, it was thought, "from an expansion commensurate to its national position and promise." At the same time, increased care was taken to discredit superficial knowledge by making the examinations more searching; and continuous and progressive study was sought to be secured by making the examinations more frequent. There had, for instance, formerly been two examinations, including matriculation, for B.A., with at least two years between them; henceforth, there were to be three, with not less than a year, in most cases, between them. The new clause did, in fact, constitute a revolution in the history of the university; but, after 18 years, it can hardly be said that the apprehensions of its opponents have been realized. Although the number of graduates now is nearly treble what it was 18 years ago, the value of the degree in public estimation has not diminished but increased. Nor have the colleges suffered, although the former protective system in their favor has been abolished. The advantages of effective collegiate instruction will always speak for themselves, as will be seen by the following statistics relating to the final examination for the ordinary B. A. degree in 1875. Of 106 candidates, 53 described themselves as coming from certain colleges and schools; the other 53, as having been prepared by private study and tuition. Of the college students, 17, or 32.1 per cent, were rejected; of the others, 28, or 52.8 per cent, were rejected. The comparison would be still more decisive, if the examinations for honors were taken into account.

The first examination in the university is the matriculation examination (to be carefully discriminated from matriculation at Oxford or Cambridge); for this there were, in 1875, 1,021 candidates, of whom 522 passed. It may be passed at the age of 16; but the average age of candidates is 19, and sometimes, 20 years. It is an examination in Latin; in any two of the following languages, — Greek, French, German; in English; in mathematics; and in natural philosophy and chemistry. It may be regarded as a good test of a complete school education. One peculiarity of the examination, as of the other pass examinations, is, that a candidate is rejected if he fails entirely in any one subject, however well he may do in all the rest. Of those who pass this examination, about one-third go no further. Those who do, henceforth pursue diverging courses. They may proceed to prepare for degrees in arts, in science, laws, or medicine. The university grants the higher degrees of Master and Doctor only after the passing of a further examination, which differs from the Bachelors' examinations by testing the depth, rather than the width, of the candidate's acquirements. Of all these degrees, the medical ones, in particular, have always had a high reputation. A large proportion of the leading physicians in London are graduates of this university. The matriculation examination and the pass examinations for B. A. and B. Sc. are, on application to the senate, held, simultaneously with the examinations in London, at various populous centers in England, at some places in Ireland, and in the colonies (*e. g.* Canada, Mauritius, and Tasmania). They will shortly be held also in Scotland.

An unintended omission in the charter of 1858 made a new charter necessary in 1863; and, in 1867, a supplemental charter was obtained, conveying the right to hold examinations for women. There have been, at times, a majority in Convocation who were willing to admit women to degrees on the same terms as men; but whether the movement will be successful remains to be seen. The programme of the general examination for women will, next year, be completely assimilated to the matriculation programme; and that is the amount of success which the movement has attained so far. Women, after passing this examination, may be examined for certificates of higher proficiency also. The Reform Act of 1867 gave the members of Convocation the right of returning a representative to Parliament: the first member for the university is the Right Hon. Robert Lowe. Convocation, in March, 1876, numbered 1.663 members. The entire number of graduates is nearly double this, only those of them being members of Convocation who are of a certain standing, and have paid the prescribed fee.

The estimate of the expenses of the university, for 1876—7, is as follows: salaries (of the registrar and his assistant, of the clerks, etc.) £2,765 5s 8d; examiners, £5,300; exhibitions, scholarships, prizes, and medals, £1,972 10 s.; incidental expenses, £520; total, £10,557 15s. 8d. If from this be deducted £4,500, which it is estimated the fees will yield during the same period, it will be seen that the university is a yearly charge to the country to the extent of about £6,000. It must be added that the beautiful new buildings in Burlington Gardens, which are the first home of its own the university has had, and which were opened by the Queen in 1870, were built entirely at public cost. The earl of Burlington, now the duke of Devonshire, was the first chancellor of the university; he still retains a seat in the senate. The second and present chancellor is Earl Granville.—See the yearly *Calendar of the University of London*, and the *Minutes of the Senate; The University of London and its Influence on Education in Scotland*, in *Frazer's Magazine* (Aug. 1876).

LORINSER, Karl Ignaz, a distinguished German physician, and writer on school hygiene, born July 24., 1796; died October 2., 1853. In 1836, he published a pamphlet on school hygiene (*Zum Schutze der Gesundheit auf Schulen*), in which he severely inveighed against the condition of the gymnasia, asserting that the great variety of studies pursued, the long school hours, and the excessive amount of home work, tended to undermine the health of the pupils. This criticism of the school management gave rise to a bitter controversy, more than seventy pamphlets being written *pro* and *con*. King Frederick William III., of Prussia, declared himself in sympathy with Lorinser's views, and ordered the ministry of education to draw up a plan to remedy the evils described in the pamphlet. The minister Altenstein, however, in his decree virtually denied the charges. An important result of this controversy was, that gymnastics were again introduced into the gymnasia, and that the necessity of making school hygiene a subject of special and thorough study, was generally admitted. The autobiography of Lorinser was published in 1864, by his son.

LOUISIANA, one of the southern states of the American Union, was originally a part of the French province of Louisiana, which was ceded to the United States in 1803. This vast tract, stretching from the Mississippi river westward to the Rocky mountains, was at first divided into two territories, that of Orleans and Louisiana, the former including the present state of Louisiana, and the latter all the remainder. In 1812, the territory of Orleans was admitted into the Union as the state of Louisiana. The population, in 1810, was 76,556, of whom 34,660 were slaves, and 7,585 free colored persons; in 1870, the population was 726,915, of whom 362,065 were whites, 364,210 colored persons, 569 Indians, and 71 Chinese.

Educational History.—While Louisiana was yet a territory, provision was made for the establishment of primary schools in each parish. In 1819, these schools were placed under the supervision of police juries; and, in 1821, under five trustees appointed by the police jury of each parish, from the resident land-owners. In that year, the sum of $800 was appropriated for the support of schools, and authority was given to increase that amount by a tax on the property of each parish. By an act of the legislature, in 1833, the secretary of state was made superintendent of public education, and acted as such from that time until 1846. The result not proving satisfactory, however, a bill was passed in 1847, providing for the appointment of a state superintendent and parish superintendents, the collection of a one mill tax on property, and the establishment of a state school fund by a consolidation of the land grants (amounting to 786,044 acres) and individual donations. The object of this legislation was to establish a free public-school system for all the white children between the ages of 6 and 16 years. Additional legislation, in 1855, imposed a poll-tax of $1.00 on each free white male inhabitant over twenty-one years old. In 1850, there were 675 public schools in the state, taught by 845 teachers, and giving instruction to 25,793 pupils. There were also 142 academies, and 8 colleges. In 1860, the number of public schools had increased to 713, with 31,813 pupils; and the school revenue amounted to $469,210. In 1868, the new state constitution provided that a state superintendent should be elected for four years, and that all the children of the state between the ages of 6 and

21 years, should be admitted to the public schools or to other state institutions of learning, without regard to race, color, or previous condition. A special act to carry out these provisions was passed in March, 1869. This required the appointment of a state board of education to consist of the superintendent of public education, one member from each congressional district in the state, and two from the state at large. To this board were committed the supervision and management of the educational interests of the state. The state was to be divided into six districts, with a division superintendent for each, whose duty it was to supervise and manage the schools in his district, subject to the control of the state board. Boards of directors for each district in the state were also to be appointed by the state board, for the purpose of establishing and supervising schools in their respective districts, subject to the authority of the division superintendents. A two mill property tax was directed to be levied, leaving it optional with the voters to raise by local taxation whatever additional funds were necessary for the erection or hiring of school buildings. During the earlier years of legislation, the sparseness of the population rendered the school laws, in many respects, inoperative; and, during the last twenty years, political disturbances ending finally in civil war, by producing class distinctions founded on color, made the work of education in the state a matter of great difficulty. Since the establishment of the school system, in 1870, considerable progress has been made. The school boards have been energetic and judicious; the school funds have been managed with economy and prudence, many new schools have been established, and an increased number of pupils brought under instruction. The first state superintendent under the new law was Thomas W. Conway, who was succeeded, in 1872, by William G. Brown, the present incumbent (1876).

School system.—The public schools, according to the provisions of the act of March 16., 1870, are governed by the *state board of education*, which consists of a state superintendent and six division superintendents; there is also an assistant superintendent for the city of New Orleans. The duties of the board are to appoint parish, city, town, and district directors, to make all needful rules for the government of schools, to enforce the constitutional provisions relating to the admission into the schools of all children without regard to race, color, or previous condition, to recommend a uniform series of text-books, and to prescribe a course of study. *The state superintendent* is, *ex officio*, president of the board, and its chief executive officer. He is charged with the care of all educational reports and documents, exercises a general supervision over the division superintendents, holding meetings with them in the several divisions of the state, at least once a year, issues teachers' certificates of qualification, apportions the school fund, examines and approves all plans for school buildings erected, and makes a report to the general assembly at each session.—*Division superintendents* have control of the schools in their respective divisions, examine teachers, issue certificates of qualification good for one year in the division where issued, hold teachers' institutes, organize teachers' associations, audit treasurers' accounts, make reports to the state board and state superintendent, and exercise a general supervision over their respective divisions, subject only to the jurisdiction of the state board and the state superintendent.—*Boards of school directors* discharge all the duties usually appertaining to such bodies in other states. The school month consists of four weeks of five days each. The Bible is not excluded from the public schools, but no pupil is required to read it contrary to the wishes of his parents or guardians.

Educational condition.—The total number of school districts in the state, in 1875, was 473; and the number of public schools, 1,032; besides which there were reported 418 private schools. The whole amount of school income for the year was $789,068.95, of which $314,818.03 was derived from state apportionments. Other items of the *school statistics* are given below:

Number of children of school age			280,387
Number enrolled in public schools			74,846
Number attending private schools			22,306
Number of teachers,	males,	797	
	females,	760	
	Total,		1,557
Average salary of teachers per month			$37.00
Expenditures, for salaries,		$573,144.44	
" other purposes,		290,247.42	
	Total,		$863,391.86

Normal Instruction.—Although the law provides for the establishment of a normal school in the state, no steps have yet been taken to carry out its provisions in this respect. The city of New Orleans had formerly a normal school; but, owing to the inability of the school board to sustain it with appropriations, it has passed from their control, and is now a department of the New Orleans University. Straight University and the Peabody Normal Seminary, in the same city, also afford normal instruction and training. The division superintendents are required by law to hold teachers' institutes annually in their respective divisions.

Secondary Instruction.—The institutions of this grade, in the state, are (1) ***private schools***, (2) ***high schools***, and (3) ***business colleges***. The first, in 1875, reported 846 teachers and, 22,306 scholars. Of the ***high schools***, four are mentioned in the state superintendent's report for 1875, three being established in New Orleans, and the other recently open at Baton Rouge. One of those located in New Orleans is for boys; the other two, for girls, The Central High School for boys, is divided into six departments, as follows: English literature; Latin and Greek; science; mathematics; commerce, comprising penmanship, drawing, and book-keeping; and French. During the first year in this school, all pursue the same studies; after that time, the study of the classics is optional. Four ***business colleges*** reported, in 1874, to the U. S. Bureau of Education, 12 teachers and 915 pupils, of whom 860 were males, and 55 females. Their courses of instruction vary from three months to a year.

Superior Instruction.—The institutions which afford opportunities for higher instruction, including the Louisiana State University (q. v.), are enumerated in the following table:

NAME	Location	When founded	Religious denomination
Centenary College........	Jackson	1825	M. Epis.S.
Leland University.......	N. Orleans	1870	Non-sect.
Louisiana State Univ'ty..	Bat. Rouge	1853	Non-sect.
New Orleans University..	N. Orleans	1373	M. Epis.
St. Charles College.......	Gr. Coteau	1852	R. C.
St.Mary Jefferson College.	St. James	1861	R. C.
Straight University......	N. Orleans	1869	Evangel.

Centenary College, the oldest in the state, is also one of the most efficient. The New Orleans University, like Straight University, makes no distinction of race or sex in its requirements for admission. It has a preparatory, a normal, a collegiate, and a theological department. The Silliman Female Collegiate Institute, at Clinton, under the control of the Presbyterians, also affords superior instruction. It has a collegiate course, and is authorized to confer degrees.

Scientific and Professional Instruction.—The Agricultural and Mechanical College of Louisiana was opened June 1., 1874, in the building of the Louisiana University, in pursuance of an act of the legislature, passed in April of the same year, making provision for carrying into effect the purposes of the donation, by the United States, of public lands for the establishment of an agricultural and mechanical college in the state. The Chalmette battle-ground, in the parish of St. Bernard, where the state owns 200 acres of land, was selected as a site for the college. The only schools of theology are the Biblical department of New Orleans University, the theological department of Straight University, which is open to all denominations, and the theological department of Leland University. The law department of the University of Louisiana performs the office of a law school, besides which there is a law department in Straight University, instructed by members of the New Orleans bar. By a special act of the legislature, a diploma from this department entitles the graduate to practice in all the courts of the state. The same institution has also a medical department.

Special Instruction.—The Louisiana Institution for the Education of the Deaf and Dumb, at Baton Rouge, was founded in 1854. In 1874, it had 51 pupils, and 10 instructors. The value of its grounds, buildings, etc., is about $200,000. The Institution for the Instruction of the Blind, also at Baton Rouge, was founded in 1871. It is represented to be in a flourishing condition. In 1874, it had 65 pupils, and 19 instructors and other employés. The value of its grounds and buildings is about $100,000. This institution includes also an industrial home for the blind. Besides these institutions, there is an insane asylum, at Jackson, supported by the state at an annual cost of about $40,000.

LOUISIANA STATE UNIVERSITY, at Baton Rouge, La., was chartered in 1853, being founded upon grants of land made by Congress to the state for the establishment of a seminary of learning. It was opened at Alexandria, in January, 1860, under the superintendence of Col. (now Gen.) Wm. T. Sherman, and continued in operation till June, 1861, when it was closed on account of the war. It was reopened in 1862—3, under the superintendence of Col. Wm. E. M. Linfield and Prof. Wm. A. Seay, but was again closed. It was again opened in October, 1865, under the superintendence of Col. David F. Boyd, who resigned in 1875, but is still (1876) in charge of the institution. In 1869, the university building having been burned, the institution was transferred to the buildings of the Asylum for the Deaf and Dumb at Baton Rouge. This location is intended to be temporary, until the edifice at Alexandria shall be rebuilt. The university owns state bonds to the amount of $138,000, on which it receives 6 per cent interest. It has a library of 13,000 volumes, good chemical and philosophical apparatus, and museums of natural history, fine arts, etc. The value of its real and personal property is about $160,500. The cost of tuition is $80 a year. An act of 1870 provided for the education and maintenance of two indigent youths from each parish, and 20 from the city of New Orleans, who, after remaining at the university four years, were required to teach school in the state two years. No provision, however, has been made recently for carrying this act into effect. By act of the legislature, the professors of engineering, mineralogy, geology, botany, and zoölogy, of this institution, are required to make surveys of Louisiana, in their respective departments. Several reports of these surveys have been made. The organization of the university is thoroughly military, and there are daily drills and parades. The course of study embraces a preparatory and an academic department, a special school of civil engineering, and a commercial school. The academic department has a literary (or classical), a scientific, and an optional course. The degrees conferred are B. A., B. S., B. Ph., A. M., and C. E. In 1872—3, there were 12 instructors and 140 students. Since then, the unsettled condition of the state and the consequent withdrawal of legislative support have greatly embarrassed the institution; and, in 1876, there were only 22 students. The number of graduates, from 1869 to 1874, inclusive, was 58.

LOUISVILLE, the chief city of the state of Kentucky, having a population, according to the U. S. census of 1870, of 100,753, of whom 14,956 were colored persons, and 25,668 foreigners, the latter including 14,380 natives of Germany. This city has grown up during the present century, its population, in 1810, being only 1,357. The town was established by an act of the Virginia legislature in 1780, and called Louisville, in honor of Louis XVI., king of France, important aid having been furnished by that country to the United States in their struggle for independence.

Educational History.—Among the earliest efforts in the cause of education in Kentucky, were those made by the Roman Catholics, who established schools in connection with their churches, in many parts of the state; and it is probable that Louisville shared in the benefits of these efforts. In 1819, an institution known as the *Seminary*, gave instruction in the several branches of an English and classical education. It was under the direction of the trustees of the town, but was not well supported, the wants of the community requiring little beyond elementary education. In 1837, the Medical Institute was organized, having received an appropriation of $50,000 from the city council, and opened with 80 students. In 1847, the building for the University of Louisville was sufficiently near completion to permit the opening of its law department, the first lectures in which were delivered to about 30 students. At that time, there were, in the city, 4 large public-school buildings, and 24 schools, of which 6 were grammar schools,—3 for males and 3 for females. In 1861, a high school for males, with all the rights and privileges of a university, was chartered by the legislature, as an institution for superior instruction, in connection with the public schools of the city. In 1862—3, the average daily attendance of pupils in the public schools was 3,851. Two years afterward, instruction in vocal music was made a part of the common-school course; and, in 1868, the study of the German language, which had been previously introduced, had been so far extended, that one-half of all the pupils (over 4,000) received instruction in it. In 1870, there were 2 high schools, and 17 schools of an inferior grade. The progress of the school system has been uninterrupted since that time. The number of pupils enrolled in the public schools has increased, during the ten years ending in 1875, from 9,388 to 17,593; and the cost of the system, from $103,425.05 to $255,529.02.

School System.—The public schools are under the management of a *board of trustees*, consisting of 24 members, 2 from each ward of the city. The chief executive officer of the system is the *superintendent of the public schools*, who exercises a general supervision over the schools, and makes an annual report to the board of trustees. There is also a superintendent of German instruction, who is subordinate to the superintendent of schools, but acts under the direction of the committee on German, of the board of trustees. The *board of examiners of public schools* consists of the superintendent and six or more professional teachers, who hold principals' certificates, selected by the committee on examinations and course of study of the board of trustees; and there is also a German board of examiners, consisting of the superintendent and other persons selected by the committee. All teachers are required to be at least 18 years of age. The schools are divided into primary, district, intermediate, and high schools, besides the evening schools and the training school for teachers. The studies pursued embrace all the ordinary common-school branches, besides German and music, which are taught in all the grades of the schools.—The length of the school course is designed to be 7½ years in the lower grades, 5 years in the male high school, 4 years in the female high school, and 2 years in the training school. The support of the schools is chiefly derived from a city tax. The daily exercises in each are commenced by the reading of a selection from the Scriptures. The legal school age is from 6 to 20 years. Children living outside the city limits are permitted to attend the public schools on payment of a tuition fee ranging from $20 to $50 per annum.

Educational Condition.—The whole number of schools, in 1875, was 34, as follows: 2 high schools,—1 male, and 1 female, 6 intermediate schools, 14 district schools, 7 primary schools, 4 night schools, and 1 training school. Of the schools of the lower grade, 5 are for colored children. The principal items of *school statistics*, for 1875, are as follows:

Whole number of children of school age		44,827
Whole number of pupils enrolled		17,593
Number of colored pupils enrolled		2,634
Average daily attendance		11,551
Average attendance in the night schools		610
Number of teachers, English	286	
" " " German	27	
" " " of music	4	
Total number of teachers		317
Total receipts for school purposes		$301,655.72
Total expenditures		$255,529.02
Cost per pupil		$19.95
Total value of school property		$847,300.00

The course of instruction in the training school, or class, embraces arithmetic, algebra, geometry, history, English grammar and composition, elocution, physical geography, physiology, astronomy, chemistry, and theory and methods of teaching. The whole number of pupils in this school, in 1875, was 42. The Male High School contains five classes, including the preparatory class. The studies taught are comprised in the following departments: belles-lettres, ancient languages, pure mathematics, chemistry and technology, applied mathematics, and modern languages. Any student who passes a satisfactory examination in any of these departments is entitled to a certificate of graduation in the same. This institution, in 1875, had an enrollment of 221 students, and a faculty of 6 members, including the president. For admission into the Female High School, applicants are required to pass an examination in the branches taught in the first grade of the Intermediate Schools. They must also be at least 12 years of age. The number of teachers in the school, in 1875, was 424.

Besides the institutions for superior, professional, and scientific instruction mentioned in the article on *Kentucky*, there are several private schools and academies, and 3 public libraries, having an aggregate of about 40,000 volumes. The Public Library of Kentucky alone contains 20,000 volumes.

LOVE, on the part of pupils for their teacher, is one of the most essential elements of his success, just as antipathy (q. v.) constitutes an insurmountable obstacle to the exertion of any important educational influence. The first thing, therefore, which the educator should strive to do is to win the affection of his pupils; if that is accomplished, every thing else will be done without difficulty. It is of little use to address merely the intellect of children. Their curiosity, it is true, can be excited, their attention aroused, and the faculties of their minds, to a certain extent, be developed and sharpened; but the real elements of character are behind all this; and these cannot be affected in any important degree by mere intellectual training. The heart—the sensibilities and the will — must be reached; and the key to success in this, the greatest office of the educator, is love. When love for the teacher reigns in the bosom of his pupil, there is entire confidence in him, a desire to obey him, to please him, to listen to his precepts, to imitate his example, both in words and in acts; indeed, by an inexplicable psychologic law, the pupil seems to be bound to the teacher by a kind of magnetic chain, and is subject in every thing to his will. Fear, on the other hand, repels, and thus prevents the operation of that influence without which educational processes are, more or less, nugatory. The fear to do wrong, and of the punishment which is to follow it, is not, however, inconsistent with a love of the teacher. (See FEAR.) The latter must make himself, and the authority which he wields, respected; or he will incur the contempt of his pupils; and this is, of course, antagonistic to love. Children naturally recognize authority, however much they may strive to evade or defy it; and its just and rightful exercise does not interfere with their warmest affections toward parents and teachers. Hence, love is not to be inspired by making improper concessions to children, for these they construe into weakness, which they despise. Minute directions may be given for the winning of the pupil's affections; but these would be either unnecessary or futile. Love on the part of the teacher can alone produce love in the hearts of the pupils. He cannot put on a semblance of affectionate regard for his pupils; he must feel it. Children have naturally deep intuitions into character, and detect hypocrisy almost instantly; hence they at once discern whether there is any real affection in the mind of the teacher towards themselves, or only a mere pretense. Love will show itself in his appearance, his words, his manners; every tone of his voice will indicate it, if it exist, and the pleasant smile beaming habitually from his countenance will, while making his own labors pleasant and easy, make light the hardest tasks of his pupils, by exciting their ambition and determination to accomplish it. The teacher should, however, never forget the relation existing between him and his pupils. "Some teachers," says Hart (*In the School-Room*, Phila., 1868), "in avoiding a hard, repulsive manner, run to the opposite extreme, and lose the respect of their scholars by undue familiarity. Children do not expect you to become their playmate and fellow, before giving you their love and confidence. Their native tendency is to look up. They yearn for repose upon one superior to themselves."

LOYOLA COLLEGE, in Baltimore, Md., was opened in 1852, and chartered in 1853. It is a Roman Catholic institution, controlled by members of the Society of Jesus. It has a museum, philosophical apparatus, and libraries containing 21,500 volumes. There is a classical, a commercial, and a preparatory course. The cost of tuition, in the preparatory course, is $50 a year; in the other courses, $75. In 1875—6, there were 16 instructors and 140 students.

LUTHER, Martin, the author of the great religious movement of the 16th century, was born at Eisleben, Nov. 10., 1483 (according to others, 1484), and died in the same town Feb. 18., 1546. After attending the town school of Mansfeld and the Latin schools of Magdeburg and Eisenach, he went, in 1501, to the university of Erfurt in order to study law. In 1505, he entered the Augustinian convent at Erfurt, and in 1508, received the appointment of professor in the university of Wittenberg. There he began, in 1517, the religious reform which made his name so famous. As Luther held that all Christians should read the Bible in their native tongue, the governments which adopted the Reformation had to direct their attention to the establishment of schools in all the parishes. Luther himself, in 1524, issued a powerful appeal to "the burgomasters and magistrates of all towns in the German countries," in which he urged them to establish schools, and to provide for the education of school-teachers, and the establishment of school libraries. He laid great stress upon the importance of religious instruction and the ancient languages, and made many suggestions in regard to an improvement of the methods of teaching, which were adopted by educators of the following centuries. His German translation of the Bible and his smaller catechism were generally introduced into the Lutheran schools, and have remained in extensive use up to the present day. The first German primer (*Fibel*), which appeared about this time, is by some ascribed to Luther; by others to Melanchthon. It contained the alphabet, and as reading exercises the ten commandments, the creed, the Lord's Prayer, some passages from the Bible, and prayers. At the end, the numbers from 1 to 100, and the multiplication table were given. Many of the measures which were taken by Melanchthon for the reformation of schools, were, in great part, due to the advice and co-operation of Luther. For the schools which he recommended the German burgomasters to establish, Luther drew up a comprehensive course of studies, which he sent to his friend Spalatin with the request to submit it to the elector of Saxony. This course of studies is either verbally contained in the *Book of Visitation* (*Visitationsbüchlein*, published by Melanchthon in 1528), or at least forms the basis of the one published by Melanchthon.—See Gedike, *Luther's Pädagogik* (1792); Bruestlein, *Luther's Einfluss auf das Volksschulwesen und den Religionsunterricht* (1852); J. Schiller, *Dr. M. Luther über christliche Kinderzucht* (2d ed., 1854).

LUTHERAN CHURCH, the name of the religious denomination which arose in the 16th century, from the church reformation effected by Martin Luther. It has also been designated by the name Evangelical, Evangelical Lutheran, or Protestant Church, or, as in Austria, the Church of the Augsburg Confession. The three general creeds of the ancient church, and the Confession of Augsburg have generally been regarded by Lutherans as standards of faith. In respect to constitution the Lutheran churches greatly differ. Sweden, Norway, and Denmark have an episcopal, most of the other churches a synodal or consistorial, form of government; the latter, which means a government of the church by state boards called consistories, is, however, on the wane. In Prussia and some of the other German states, the Lutheran Church has been united with the Reformed Church into one ecclesiastical organization, called the United Evangelical Church (q. v.); but the Lutherans to a large extent have regarded this as a mere confederation which does not impair or alter their standing as Lutherans. In Germany, as in other countries, the predominance of rationalistic views, and the almost unlimited freedom of belief or unbelief, which has been practically conceded to the clergy and members of the church, have, to a great extent, swept away the distinctive landmarks of the Lutheran denomination. It has been calculated, however, that of the 25 millions of Protestants in the German empire, 20,000,000, at least, are of Lutheran extraction. In the Scandinavian kingdoms, which have an aggregate population of about 8,000,000, as well as in the grand-duchy of Finland, and in the Baltic provinces of Russia, nearly the entire population is Lutheran. Austria had, in 1869, a Lutheran population of 1,365,000, and Russian Poland, 240,000. France has lost almost all her Lutheran population by the annexation to Germany of Alsace and Lorraine. The entire Lutheran population of the world (including the Lutheran portion of the United Evangelical Church) has been estimated at about 40,000,000. In consequence of the close connection of church and state in Europe, the Lutheran Church has exerted, and to some extent still exerts, a very great influence upon the educational institutions of those countries in which it prevails. Universities and gymnasia have, however, so generally passed under the sole control of the state, and in the German churches so wide a departure from the official creeds of the Protestant churches has been generally allowed to theologians, that it would be extremely difficult to state in a few words the relation of the Lutheran Church to the learned institutions of the countries named. It may be said, however, that at present (1876) the universities of Rostock, Erlangen, and Leipsic, in Germany, those of Copenhagen, Lund, and Upsal, in the Scandinavian kingdoms, and of Dorpat, in Russia, are seats of a strictly Lutheran theology. (See Germany, Denmark, Finland, Norway, Sweden.)

The immigration of Lutherans into the United States began as early as 1621, when a few came to New York from Holland. Their first church was built in 1671. They were soon followed by a Lutheran colony from Sweden, and by more numerous emigrants from Germany, who chiefly settled in Pennsylvania. In the 19th century, the immigration into the United States, from the Lutheran countries of Europe,—Germany, Denmark, Sweden, and Norway, increased so rapidly, that the number of preachers and of communicants, which, in 1820, was only 170 and 35,000, respectively, rose, in 1875, to 2,669 and 573,149. The first generation of immigrants retain their native tongue in divine worship; of their descendants, a considerable number have, in the course of time, substituted for it the English. Still the church, school, and family language of a large majority of these churches is even now chiefly German. Some idea of the proportion of the languages spoken among the Lutherans of the United States may be formed from the fact, that of their periodicals, 22 are published in the English language, 30, in the German, 5, in the Swedish, and 8, in the Danish or Norwegian language. Like the Methodists and Baptists, the Lutherans of the United States are divided into a number of independent bodies which, to some extent, differ as to certain points of doctrine. The principal divisions are the following:

(1) *The General Synod.*—This was formed in 1820, and is the oldest of the general bodies. In it the English language largely predominates. It allows larger liberties than the other bodies in both doctrine and practice. It recognizes the Augsburg Confession as the chief exposition of its faith, but does not impose a strict adherence to its text as a test of membership.

(2) *The General Council.*—This was formed in 1867. It exacts a strict adherence to the unaltered Augsburg Confession, and recognizes the Apology for the Augsburg Confession, Luther's greater and smaller catechisms, the Schmalkalden Articles, and the Formula of Concord, as forming, with the unaltered Augsburg Confession, the full creed of the same faith.

(3) *The Synodical Conference.*—This is the most numerous Lutheran body in the United States. It is also the most strict in its interpretation of the standards, and in its rules of membership and fellowship. It was formed in 1872, and the language used in its churches and schools is almost wholly German.

(4) *The Southern Synod.*—This withdrew from the General Synod during the civil war, chiefly for political reasons, and formed the *General Synod South*. Besides these four general organizations, there are seven particular synods, which are entirely independent.

The Lutheran bodies in the United States have always felt the importance of the educational work required of them, and have endeavored to meet its demands as far as they have had the means. In 1773, Drs. Schmidt and Hellmuth opened, in Philadelphia, a Latin school and a private seminary for the instruction of candidates for the ministry. It continued in operation for more than twenty years, and was finally closed by the necessities of war during the Revolution. In 1787, the legislature of Pennsylvania established Franklin College, Lancaster, of which Henry Ernest Muhlenberg was the president, for the especial benefit of the Germans of the commonwealth, and as a reward for their services in the war. In 1791, the Church's services to education were further recognized by the legislature of Pennsylvania, by the gift of five thousand acres of land to the Free Schools of the Lutheran Church, in Philadelphia. In 1784, Johann Christoph Kunze, of Philadelphia, accepted a call to the High German Congregation, in New York, in the hope that he might establish a Lutheran theological professorship in Columbia College. He became professor of oriental languages in that institution. The Lutherans attach great importance to theological instruction, and theological seminaries receive very great consideration from them. Their oldest institutions, in fact, seem to have been at first theological schools, around which literary departments were afterwards formed. Hartwick Seminary, New York, was founded in 1816. The theological school there was the first public training school of the American Lutheran Church for candidates for the ministry. The theological seminary, at Gettysburg, Pa., was founded by the *General Synod* in 1826. Previous to that time, the Rev. Dr. S. S. Schmucker, of New Market, Va., and the Rev. D. F. Schaeffer, of Frederick, Md., had received a limited number of young men as students, and instructed them in theology. The Gettysburg seminary celebrated, in 1876, the completion of the fiftieth year of its existence. It had then furnished thirty-nine professors to various institutions, nearly all the editors of the English periodicals and reviews of the *General Synod*, and five hundred and thirty-eight ministers. Pennsylvania College, Gettysburg, Pa., was founded in 1832, six years after the theological seminary. The *General Synod* has also the following higher institutions of learning: Wittenberg College, Springfield, Ohio (founded in 1846), to which a theological department (founded in 1845) is attached; Swedish-American Ansgari College, Knoxville, Ill. (1873), with a theological department; Carthage College, Carthage, Mo. (1871); and Practical Theol. Seminary, Marshall, Wis. (1876).— The *General Synod South*, has the care of Roanoke College, Salem, Va. (1854), a theological seminary at the same place (1830, at Lexington, S. C., and removed to Salem, Va., in 1872); Newberry College, Walhalla, S. C. (1858). North Carolina College, Mt. Pleasant, N. C. (1859), and the theological department of the same (1872), are connected with the *North Carolina Synod.* The *General Council* has a theological seminary at Philadelphia, which was founded in 1864. Its other collegiate and theological seminaries are: Muhlenberg College, Allentown, Pa. (1867); Augustana College and theological seminary (the latter founded in 1863), at Rock Island, Ill.; Mosheim College, Mosheim, Tenn.; German American College, Rousselville, Texas; Thiel College, Greenville, Pa. (1870); Wartburg Theological Seminary, Mendota, Ill.; and the Norwegian Lutheran Seminary, at Madison, Wis. (1876). The principal theological school of the *Synodical Conference* is the Concordia Theological Seminary, of which the theoretical department, at St. Louis, Mo., was founded in 1840, and the practical department, at Springfield, Ill., in 1846. Its other higher institutions are: Capital University, Columbus, Ohio (1850), with a theological department (1830); Concordia College, Fort Wayne, Ind. (1840, and organized after the plan of a German gymnasium); Luther College, Decorah, Iowa (1863); North West University, Watertown, Wis. (1865).—The conference of the Norwegian-Danish Evangelical Lutheran Church sustains the Augsburg Theological Seminary, at Minneapolis, Minn. The synod known as *Graban's Buffalo Synod* supports Martin Luther College, with a theological department, at Buffalo, N. Y., and the *Synod of Iowa* supports the College of the Iowa Synod, Mendota, Ill. The Lutheran almanacs give also lists of twenty-two classical schools and academies and seven female seminaries under the patronage of the various Lutheran bodies, or looking to Lutherans for support.—Orphans' homes and schools are supported by the general bodies and several synods at Loysville, Zelienople, Rochester, Middletown, and Germantown, Pa., Mt. Vernon and Buffalo, N. Y., Toledo, Ohio, Jacksonville, Addison, and Andover, Ill., Vasa, Minn., St. Louis, Mo., Boston, Mass., Norris, Mich., and Andrew, Iowa. The *Missouri Synod* has a deaf and dumb institute, at Norris, Mich.— The *Synodical Conference* enumerates, among the conditions required for admission to, and membership in, its organization, the providing of Christian school instruction for the congregations. Accordingly, parochial schools are generally connected with its congregations. For the education of its school teachers, the *Synodical Conference* supports a teachers' seminary at Addison, Ill., which, in 1875, had 5 instructors and 114 students. Three educational papers, in the German language, were published in 1877, the *Schulblatt* and *Abendschule*, at St. Louis, and the *Schulzeitung*, at Milwaukee.

LYCEUM (Gr. *Λύκειον*, named after the neighboring temple of Apollo, *Λύκειος*, a surname which is differently explained by Greek etymologists), a gymnasium or public palestra with covered walks, in the eastern suburb of Athens, where Aristotle and the philosophers of his school taught. The Romans gave the name *lyceum* to several similar institutions, as to those in the

Tusculanum of Cicero, and in the villa of Adrian at Tibur. In the middle ages, *lyceum* denoted an institution in which the Aristotelian philosophy was taught. In modern times, the meaning of the word varies greatly in different countries. In Würtemberg, it is equivalent to a progymnasium, or the five lower classes of a gymnasium; in Alsace-Lorraine, it is still given to some of the gymnasia, with which a real school is connected; in France, the lyceum is the highest secondary school and comprises eight classes; in Italy, it corresponds to the three higher classes of the German gymnasium; in Finland, some of the lyceums which have seven classes correspond to the German gymnasium, and some which have only four classes, to the higher classes of the gymnasium; in Roumania, the lyceum has seven classes, and equals the complete gymnasium. In England and in the United States, the word is not applied to any class of schools, but is sometimes given to literary associations. For a fuller account of the modern lyceums see the articles on the several countries; for an account of the *American Lyceum*, see HOLBROOK, JOSIAH.

LYCURGUS (Greek Λυκοῦργος, the light-producer), the reputed author of the Spartan system of education. He is said to have lived in the 9th century before Christ; but so little is known of his life, that even his existence has been doubted by some, his name being regarded by them as the personified origin of a new era of culture. According to the traditional view, he belonged to the royal family of Sparta, and was guardian of his nephew, king Charilaus. Having been forced by an opposing party to leave his country, he made extensive travels in Asia Minor, and in Crete, where he became acquainted with the laws of Minos. He was finally recalled to Sparta, in order to put an end to the increasing disorders, for which purpose he enacted the laws which have made his name immortal. He made the Spartans swear to keep his laws, until he should return from Delphi, where he was to ask the god's opinion as to their value. As the oracle predicted for Sparta an unfailing prosperity as long as these laws should be observed, he never returned to his native land. According to one legend, he starved himself to death, having previously ordered the ashes of his corpse to be thrown into the sea in order that they might not be brought back to Sparta so as to release the Spartans from their pledge. That the whole of the political and educational system of Sparta was not the work of Lycurgus, is admitted even by those who have entire faith in the existence of a famous lawgiver of that name. (See SPARTA.)

LYON, Mary, an American teacher, born in Buckland, Mass., Feb. 28., 1797; died in South Hadley, Mass., Mar. 5., 1849. In the face of many obstacles, she acquired sufficient education to enable her to teach, which she did without notable result till 1837, when she established at South Hadley, Mass., the Mount Holyoke Female Seminary, the first of several similar establishments founded by her pupils. The distinct feature of the Mount Holyoke seminary was the union of domestic labor with intellectual and moral instruction. Her published works are *Tendencies of the principles embraced and the system adopted in the Mount Holyoke Female Seminary* (1840); and the *Missionary Offering* (Boston, 1843).

McCORKLE COLLEGE, at Bloomfield (Sago P. O.), Ohio, was founded as a high school in 1862 by the Rev. Wm. Ballantine, A. M., who has been its president from the first. It was incorporated as an academy in 1868, and as a college in 1873. It is under Associate Presbyterian control. Both sexes are admitted. The principal design of the institution is to qualify young men for the study of theology; yet a general and thorough course of education, well adapted to qualify students for the pursuit of any of the learned professions, is given, in languages, mathematics, and the sciences. There are three departments: a preparatory, two years; and a classical and a scientific, each four years. The cost of tuition ranges from $18 to $30 per year. In 1874—5, there were 5 instructors and 43 students.

McCOSH, James, an eminent Scottish scholar, teacher, and metaphysician, born in Ayrshire, in 1811. He was educated in the universities of Glasgow and Edinburgh; and, in 1835, ordained a minister of the Church of Scotland, at Arbroath. Subsequently, while pastor at Brechin, he took an active part in the organization of the Free Church of Scotland. In 1851, he accepted the appointment of professor of logic and metaphysics in Queen's College, Belfast; and while here distinguished himself both as a lecturer and a metaphysician, publishing *Intuitions of the Mind* (London, 1860), a work of great merit for its originality and acuteness. In 1868, he was elected president of the College of New Jersey, at Princeton, which position he still occupies. As an educator he has exerted a very extensive influence, by the breadth and sagacity of his views. His reputation as a metaphysician is not exceeded by that of any living scholar. In this department of intellectual research, his writings have been very numerous, and, as is universally conceded, are characterized by remarkable depth of thought and acuteness of reasoning.

McGUFFEY, William Holmes, an American educator, born in Washington Co., Pa., Sept. 23., 1800; died in Charlottesville, Va., May 4., 1873. He graduated at Washington College, in Pennsylvania, in 1826, and was soon afterwards elected professor of ancient languages in Miami University, at Athens, Ohio, in which institution he was transferred, in 1832, to the chair of moral philosophy. In 1836, he was elected president of Cincinnati College; but, in 1839, he returned to Miami University to take the position of president of the institution. In 1845, he accepted the appointment of professor of moral philosophy and political economy in the University of Virginia, where he remained until his death. While president of Cincinnati College, he began the preparation of the *Eclectic Series* of school reading-books, which became widely popular, more than a million copies, it is said, having been issued. It is by these that he is best known.

M'KENDREE COLLEGE, at Lebanon, Ill., established in 1828, was chartered in 1834, and rechartered in 1839. It is under Methodist Episcopal control. It has beautiful grounds, and buildings well adapted for college purposes. The location is healthful and easy of access. The libraries contain about 7,500 volumes: and the apparatus is extensive. The institution is supported by tuition fees and the income of an endowment of $45,000. Both sexes are admitted. The collegiate department has a classical and a scientific course, and there is a preparatory and a law department. The cost of tuition in the collegiate department is $24 a year. In 1875—6, there were 8 instructors, and 226 students, of whom 129 were in the collegiate and 8 in the law department. The presidents have been as follows: the Rev. Peter Akers, D. D., 7 years; the Rev. John W. Merrill, D. D., 3 years; the Rev. James Finley, D. D., 4 years; the Rev. Erastus Wentworth, D. D., 4 years; the Rev. Anson Cummings, D. D., 2 years; the Rev. Nelson Cobleigh, D. D., 5 years; the Rev. Robert Allyn, D. D., 13 years; and the Rev. John W. Locke, D. D., the present incumbent (1876), 2 years.

McMINNVILLE COLLEGE, at McMinnville, Oregon, under the control of Baptists, was chartered in 1859. It has an endowment fund of $25,000. It comprises a primary, an academic, and a collegiate department, in which the cost of tuition is $18, $30, and $44 a year, respectively. Both sexes are admitted. In 1873—4, there where 6 instructors and 150 students.

MADISON UNIVERSITY, at Hamilton, N. Y., under Baptist control, was chartered in 1846. It comprises a theological seminary, a college, and an academy. The seminary was opened in 1820; the college and academy were organized in 1832. The college has a classical and a scientific course. The endowment amounts to $435,000. The university has extensive cabinets of natural history, and valuable chemical and philosophical apparatus. The libraries contain 11,000 volumes. The cost of tuition in the college is $30 a year, in the academy $20; in the seminary, tuition and room rent are free. In 1875—6, there were in the seminary, 5 instructors and 33 students; college, 9 instructors and 87 students; academy, 9 instructors and 89 students; total, deducting repetitions, 19 instructors and 209 students. The Rev. Ebenezer Dodge, D. D., LL. D., is (1876) the president.

MADRAS SYSTEM. See Monitorial System.

MADVIG, Johann Nikolai, a Danish educator and philologist, born in Svanike, on the island of Bornholm, in 1804. He graduated at the university of Copenhagen, where he became professor of the Latin language and literature in 1829. In 1848, he was appointed minister of public worship, and in 1852, director of public instruction. He has edited the works of Cicero, Juvenal, Livy, and Lucretius. In 1829, he published a pamphlet in which he attempted to prove that the *De Orthographia*, attributed to Apuleius, and first published by Mai in 1823, was written as late as the 15th century. He has also published a *Glance at the Constitutions of Antiquity; The Creation, Development, and Life of Language; Adversaria Critica ad Scriptores Græcos et Latinos* (vol. I., 1871); and a *Latin Grammar for Schools*. This last was translated by the Rev. G. Woods (Oxford, 1859).

MAGER, Karl, a distinguished German educator, was born near Dusseldorf, Jan. 1., 1810; died in Wiesbaden, June 10., 1858. He studied in Bonn, Berlin, and Paris, where he early attracted attention by his talents and scholarship. After his return to Germany, he engaged in the study of the philosophical systems of Hegel and Herbart, and in those of education and instruction, introduced by Pestalozzi and Diesterweg. For the *Wegweiser für deutsche Lehrer*, edited by the latter, he wrote an essay on the teaching of foreign languages (1835 and 1838), after which he became professor in the cantonal school, in Geneva. This position he soon resigned on account of a spinal disease, from which he found some relief in Cannstadt, a watering-place, near Stuttgart. In 1840, he founded the *Pädagogische Revue*, which soon became one of the leading journals for all questions of education and instruction in Germany and Switzerland. This was edited by him until 1849. The wish to test practically his theories and school books induced him to accept the professorship of modern languages (French and German) in the cantonal school of Aarau, Switzerland. After a few years, he resigned this position, to give all his time to the *Pädagogische Revue*, which, for his convenience, had been removed from Stuttgart to Zürich. In 1848, he was invited by the Staatsminister Wydenbruck, in Weimar, to take the direction of the real gymnasium in Eisenach, an institution that had been organized according to his plan and ideas. He began his work with his usual ardor; but, unfortunately, his disease grew worse, and his health became so much impaired, that, in 1852, he was obliged to retire from his office, and, even to give up all literary work, thus being unable to show whether his practical skill as a teacher and head of an institution was equal to his extensive scholarship and the brilliancy of his writings. His death occurred a few years after his retirement. Mager was without doubt an eminent reformer in the field of education and instruction; and his country is largely indebted to him for his efforts in the introduction of the *genetic method* and the creation of the higher real school or real gymnasium. (See Real Schools.) A few words will suffice to characterize Mager's ideas on the genetic method, which he calls the combination of analysis and synthesis. There is a method of development proper to every object—a peculiar mode of growth, both in form and substance; this is objective method. But the term method has also a subjective meaning, implying the manner in which the pupil acquires knowledge, and hence having reference to his self-activity, which it is the office of the educator to stimulate, to restrain, or to guide. Now, psychology and experience teach us that the human mind has to go through different stages in the acquisition of knowledge: perception, conception, and, finally, abstraction; and the mode of instruction must conform to the operations of the human mind. Applying these principles to the study of foreign languages, it is obvious that grammar cannot be its beginning, but must be its end. Man speaks in sentences. The simplest form of human speech is not a word, but a sentence. The old grammatical school said, the sum of the parts of a thing is the thing; but this is not true; the sum of the parts of a watch is not necessarily a watch; only when they are combined in a proper manner so that they indicate time, they are a watch. Just so it is with language. Hence, grammatical lexicography, inflections, parsing of words, etc., must be subordinate to syntax. Now, every sentence contains a verb, and the verb alone can form the whole sentence, though now more rarely than in the older languages; therefore grammatical instruction must begin with the verb. As the simple sentence is the beginning of language, so the most developed period is its completion. So far for the genesis of the substance; but also the form of the instruction must follow the process of human thought—intuition, perception, abstraction—first, the language (example), then its rules. But the study of language is not merely theoretical, it is practical also. He who learns a language, has to apply it, to use it; and, therefore, Mager ends with the free speaking and writing of the foreign language.—Besides several articles in the *Pädagogische Revue*, he wrote: *Geschichte der französischen Nationalliteratur* (Berlin 1837—40); *Tableau anthologique de la littérature française contemporaine* (Berlin 1837—40); *Wissenschaft der Mathematik nach heuristisch-genetischer Methode* (Berlin, 1837); *Ueber den Unterricht in fremden Sprachen* (Essen, 1838); *Die höhere Bürgerschule* (Stuttgart, 1840); *Deutsches Elementarwerk, Sprach- und Lesebuch* (a posthumous work, completed and edited by Charles Schlegel, Stuttgart, 1866); *Französisches Sprach- und Lesebuch*, revised by Charles Schlegel, Stuttgart, 1862); *Die moderne Philologie und die deutschen Schulen* (Stuttgart, 1844); *Die genetische Methode* (Zürich, 1846); *Die Encyklopädie, das System des Wissens, ein Lesebuch* (Zürich, 1847).

MAINE, until 1820 a part of Massachusetts, has an area of 35,000 sq. m., and a population, according to the census of 1870, of 629,915, found mostly in the southern half of the state.

Educational History.—This will embrace (I) The establishment of schools; (II) The maintenance of schools; (III) The supervision of schools.

I. The school system of Maine, when it became a distinct state, in 1820, was the same as that of the parent state, Massachusetts. In the constitution of Maine, the duty of the state to provide its people with the means of education, and its right to control public education throughout its entire extent, are asserted in the following article: "A general diffusion of the advantages of education being essential to the preservation of the rights and liberties of the people, to provide this important object, the legislature are authorized, and it shall be their duty, to require the several towns to make suitable provision, at their own expense, for the support and maintenance of public schools; and it shall further be their duty to suitably endow, from time to time, as the circumstances of the people may authorize, all academies, colleges, and seminaries of learning, within the state, *provided* that, at the time of making any donation, grant, or endowment, the legislature of the state shall have the right to grant any further powers, to alter, limit, or restrain, any of the powers vested in any such literary institution, as shall be judged necessary to promote the best interests thereof."—The school law of Maine remained the same as that of Massachusetts until the second legislature, in 1821, enacted a general school law differing from the former one only in requiring each town to raise, by a tax on polls and property, a sum of not less than forty cents for each inhabitant, to be apportioned among the several districts in the town, and annually expended for public schools, instead of requiring each town, as in the original law, to sustain its schools for a certain prescribed length of time each year. The district system had become fixed in the school law of Massachusetts previous to the separation, and it has been, up to the present time, recognized in the school law of Maine. At first, the towns, at their annual meetings, elected agents for the several districts; later, districts were allowed, on the vote of towns, to choose their agents, and agents were allowed to expend, at their own discretion, 10 per cent of the school money for repairs. A return of statistics to the office of the secretary of state was required; and abstracts of these were made, and transmitted to the various districts. The bank tax of one-half of one per cent on the capital stock of state banks was divided among the various towns according to the number of persons between the ages of four and twenty-one years of age, for the benefit of public schools; and power was given to districts, in 1827, and still further, in 1842, "to classify scholars and to grade their schools." The district system has proved unfavorable to the highest degree of efficiency in schools, and a few years since a law was enacted authorizing towns to abolish school-districts and to adopt a uniform township system. A law was enacted in 1873, encouraging the establishment of free high schools at the joint expense of town and state.

II. The public schools of Maine have always been free. Their support has been derived from (1) Taxes; (2) The income of permanent funds.

(1) *Taxes.*—The sum of forty cents for each inhabitant, required by the law of 1821, to be raised annually for the support of schools, was increased by subsequent legislation, in 1854, to sixty cents, in 1865 to seventy-five cents, and in 1868 to one dollar. In 1872, a law was enacted assessing annually a tax of one mill per dollar upon all the property of the state, according to the valuation thereof, to be distributed to the several towns of the state according to the number of persons of school age in each town. Upon the passage of this act, called the Mill Tax Law, the *per capita* tax was changed from one dollar to eighty cents for each inhabitant.—For many years, a large sum was added to the school fund annually by a tax upon deposits in the state banks. This amounted sometimes to 80,000 dollars in a year. With the change from state to national banks, this sum decreased until it became nothing. In 1872, a tax of one-half of one per cent was assessed upon deposits in savings-banks, to be distributed among the several towns of the state according to their school population. Many towns raise by taxation a larger sum than is prescribed by the law, and "any school district maintaining graded schools is authorized to raise for the support of these schools a sum of money not exceeding that which it receives from the town, in addition thereto."

(2) *Income of Permanent Funds.*—These funds are state and local. The state fund is derived from the proceeds of the sales of twenty townships of public lands formerly set apart for school purposes, increased from year to year by the addition thereto of unexpended balances of school money. The local funds are derived in part from the sale of lands assigned to towns for the support of schools, and in part from various other sources, such as bequests, etc. An amount equal to six per cent of the permanent school fund is distributed to the schools each year. This fund at present amounts to $400,558.

III. *Supervision of Schools.*—Notwithstanding the emphatic statements of the constitution as to the rights and duties of the state in regard to public education, there was in the law a great lack of the elements of an effective system until 1846, when, in response to determined action of the friends of education, a law was passed establishing a state board of education consisting of one member from each county, chosen by the school committees of the county in joint convention, with a secretary chosen by the board. Wm. G. Crosby, afterwards governor of the state, was secretary of the board from 1846 to 1849. He then resigned, and was succeeded by E. M. Thurston, who served until the abolition of the board, in 1852. Great good was effected by this board of education. County institutes were held, and were attended by large numbers of teachers. Teachers' associations were organized in every county of the state. Better schoolhouses were built, and the standard of teaching was raised; moreover, the state owes several improvements in the school law to this period of its history. In 1852, an act was passed directing the appointment by the governor of a school commissioner for each county, thus replacing the board of education by a much less efficient agency. In 1853, this law was repealed, and the office of state superintendent was created, the superintendent being appointed by the governor and the council. The following is a list of the successive state superintendents, with the dates of their appointment to office: Charles A. Lord, June 26., 1854; Mark H. Dunnell, March 27., 1855; John P. Craig, Feb. 28., 1856; Mark H. Dunnell, Jan. 29., 1857; Edward P. Weston, March 5., 1860; Edward Ballard, May 8., 1865; Warren Johnson March 30., 1868; and Wm. J. Corthell, the present incumbent, Oct. 26., 1876.

In 1869, acts were passed directing the appointment, by the governor and the council, of a board of county supervisors for a term of three years, and making provision for county institutes. In 1872, the first of these laws was repealed; and, three years later, the second was also repealed. The efforts of the friends of education to secure more efficient means for the training of teachers were for a long time fruitless. For several years appropriations were made by the state to academies for the maintenance of normal departments. The results proving unsatisfactory, the first state normal school, located at Farmington, was established by an act of the legislature, approved March 25., 1863; and the school went into operation Aug. 24., 1864. The second state normal school, located at Castine, went into operation Sept. 7., 1867. A state teachers' association was organized in 1859; but it was not continued, holding its last session in 1864. Another association was organized in 1867, and still holds annual sessions. Of county and town associations, there are very few.

School System.—The public schools of the state are under the supervision of the state superintendent of common schools and the town superintending school committees. There is no intermediate agency. The *state superintendent* is appointed by the governor and council for the term of three years, "or during the pleasure of the executive." It is his duty to exercise a general supervision over the schools of the state; to advise and direct town committees in the discharge of their duties, devoting all his time to the duties of his office; to collect and disseminate information as to the school systems of our own and other countries; to prescribe the studies for the common schools of the state, town committees having also the right to prescribe additional studies, and to make a report to the governor and council, annually prior to the session of the legislature. The *superintending school committees* examine all teachers, and employ teachers for the school-districts when authorized to do so by the town. They direct the general course of instruction, select a uniform system of text-books, and exercise a general supervision and control over the several schools of the town. They are required to make a written report of the condition of the schools in their respective districts, for the preceding year, at the annual town meeting, and to transmit a copy thereof to the state superintendent of common schools. They are also required to make an annual statistical report to the state superintendent on or before the first day of May of each year. Supervisors, and members of the school committee, receive for their services $1.50 a day, besides the necessary traveling expenses.

A town, at its annual meeting, or at a special meeting called for that purpose, may determine the number and limits of school-districts therein; but these districts must not be altered, discontinued, or annexed to others, except upon the written recommendation of the municipal officers and of the superintending school committee. A town may abolish its school-districts; and it must thereupon take possession of all the school property therein, levying upon the town a tax equal to the appraised value of such school property, and remitting to the tax payers of each district the appraised value of the property thus taken. The town must annually expend for the support of schools the amount received from the state school fund, under penalty of forfeiture of its share of the fund for the ensuing year; and it must raise and expend annually for the support of schools, exclusive of income from any other source, at least eighty cents for each inhabitant, or forfeit not less than twice, nor more than four times, the amount of its deficiency, and also its share of the state school fund. The assessors and the school committee may annually apportion among the smaller districts of the town, in addition to their *per capita* share of the school money, 20 per cent of money raised by the town and of that received from the state, in such a manner as to give them equal educational advantages with the larger districts.

The town may provide school books to pupils of the public schools at cost, or free of cost. It is required to choose a school committee of three for a term of office of three years, one to go out of office each year, or a supervisor instead of school committee. Towns are empowered to make such by-laws, not repugnant to the laws of the state, concerning truants and children between 6 and 17 years of age not attending school, and having no regular and lawful employment, as are most conducive to their welfare and the good order of society. Children under 15 years of age cannot be employed in a cotton or woolen manufactory without having attended school a prescribed portion of the year next preceding, and no person under the age of 16 can be employed by any corporation more than ten hours a day. A law was passed in 1875, compelling the attendance at school for at least twelve weeks each year, of all children between the ages of 6 and 15 years, unless excused by the school officers, for reasons prescribed in the act.

Every school-district is a corporate body, and all school property therein belongs to the district, and is under its full control; but all plans for the erection or reconstruction of a school-house voted by a district must be approved by the school committee. Each school-district, at its annual meeting, chooses a moderator, a clerk, and an agent, unless by vote of the town the agents are chosen in town meeting. Two or more districts may unite to support a union school for advanced scholars, or to maintain a graded school; and a district maintaining a graded school may choose a committee to classify and grade the pupils therein. Wherever, in the opinion of the school committee, a school-district unreasonably neglects or refuses to raise money to provide proper school buildings or grounds, the matter may be brought before the next town meeting, and the town may vote to raise the money by a tax upon the district, to be expended by a committee appointed by the municipal officers. A school-district may appropriate a sum not exceeding 10 per cent of its school money for any year, for the purchase of a school library and school apparatus; and adjacent districts may unite for this purpose. The school agent attends to the financial affairs of the district, and employs teachers, unless by vote of the town they are employed by the school committee. The agent may, at his discretion, expend for repairs, each year, 10 per cent of the money apportioned to the district.

Any town establishing and maintaining a free high school for at least ten weeks in any one year, is entitled to receive from the state one-half of the amount actually expended for instruction, not however exceeding $500 from the state to any one town. Two or more adjoining towns may unite in sustaining such a school; and so long as any town shall decline to avail itself of the provisions of this act, any school-district, or union of school-districts, in the town may do so.— Every teacher of a public school is required to keep a register containing the names and attendance of his pupils, and a record of such other facts as may be required by the blank forms provided for annual or other reports; and he is required to leave such register completed, and signed by the school committee, as a condition of receiving his salary.

Educational Condition.— The number of school-districts returned in 1875, was 3,953; and the number of parts of districts, 368. The number of towns in the state was 421, and the number of these which have abolished the district system was 25. The country schools are generally ungraded. In the cities and larger villages, primary and grammar schools are maintained; and, in the cities and a few of the larger villages, high schools have also been established. There were maintained, in 1875, for one or more terms, 157 free high schools, at an annual cost of $116,308, of which the state paid $38,633. There are no returns by which the number of graded schools, or departments in each grade, can be ascertained.

For the support of public schools there was paid, in 1875, $1,261,297, from the following sources:

Permanent school fund	$22,193	
Local funds	25,585	
Total from funds		$47,778
Municipal taxation for current expenses	$662,558	
School mill-tax	224,579	
Savings-bank tax	145,935	
For free high schools	116,308	
" supervision	36,968	
" normal schools	15,500	
To prolong schools	11,671	
Total taxation		$1,213,519
Total current expenses		$1,261,297

There was also expended for new schoolhouses in 1875, $110,725; and hereafter $13,000 for the support of normal schools will be taken annually from the general school fund, instead of being made a special appropriation.

The following are other important items of *school statistics* for 1875:

The number of teachers:

In summer, males, 171; females, 4,426; total, 4,597

In winter, males, 1,984; females, 2,475; total, 4,459

The average wages per month, excluding board, was of

Male teachers	$36.96
Female teachers	17.16
The average cost per month of teachers' board was	$9.52
Whole number of scholars between 4 and 21	221,447
Number registered in summer schools	117,821
Number registered in winter schools	130,343
Average attendance in summer schools	95,058
Average attendance in winter schools	105,625
Average length of schools for the year (5½ days to a week)	21 weeks 1 day.

Normal Instruction.—The date of establishment of the two state normal schools has been given in the historical sketch. For their support $13,000 is drawn from the common-school fund each year. The law establishing these schools prescribes that they "shall be thoroughly devoted to the work of training teachers for their professional labors," that "the course of study shall include the common English branches in thorough reviews, and such of the higher branches as are especially adapted to "prepare teachers to conduct the mental, moral, and physical education of their pupils," and "that the art of school management, including the best methods of government and instruction, shall have a prominent place in the daily exercises of said schools." Candidates for admission must be, if females, 16 years of age; if males, 17; they must pledge themselves to teach in the public schools of Maine for as long a time as they shall have remained connected with the normal school, and pass a satisfactory examination in reading, spelling, writing, arithmetic, geography, and English grammar. The course requires two years for its completion, and comprises the usual studies of an English high-school course, together with history of education, school laws, and didactics, and practice teaching. The schools are supplied with libraries and apparatus, and with models and copies for free-hand drawing.—The normal schools are under the direction of a board of trustees consisting of seven members, five of whom are appointed by the governor and executive council for a term of three years, the governor and the state superintendent of schools being, *ex officio*, members of the board.

Secondary Instruction (comprehending the *high schools* and the *academies*).—Of the high schools an account has already been given. The right and duty of the state to aid institutions of this class is explicitly asserted in the constitution; and, in its early history, many academies received grants of public lands. Twenty-three academies were chartered by Massachusetts before Maine became a state. For many years the elements of an effective system were lacking in the public schools of the state; and the academies, always tuition schools, effected much good. The period from 1830 to 1850 was perhaps the period of their greatest influence. Since the latter date, improvements in the public-school system, and other causes, have led to their decline, and some have been incorporated with the public-school system as high schools. Several have been endowed by religious denominations, or made preparatory schools for the several colleges of the state. Of these the most prominent are Maine Wesleyan Seminary and Female College, at Kent's Hill, the East Maine Conference Seminary, at Bucksport, both conducted by the Methodists; the Westbrook Seminary, by the Universalists; Waterville Classical Institute, Hebron Academy, and Houlton Academy,—preparatory schools for Colby University, Maine Central Institute, at Pittsfield, and Nichols Latin School at Lewiston,—preparatory schools for Bates College, and Hallowell Classical Institute, a preparatory school for Bowdoin College.

Denominational and Parochial Schools.—Most of the academies of the state were originally founded by the efforts of religious denominations. The most prominent have been named in the preceding section. Of parochial schools, there are none but a few small Roman Catholic schools in connection with local churches.

Superior Instruction. — Bowdoin College (q. v.), the oldest college in Maine, situated at Brunswick, received its charter in 1794, with a grant of five townships of land. It derives its name from James Bowdoin, governor of Massachusetts in 1785. The board of trustees and the board of overseers met in 1801 and elected a president, and a professor of languages. At the installation of these officers, in 1802, 8 students were admitted, and in 1806 the first class, consisting of 8, was graduated. It has now an academical faculty of 15, and numbered, in 1875—6, 148 students. — Waterville College, located at Waterville, was established in 1820; and a few years since, the name was changed to Colby University (q. v.), in honor of Gardner Colby, a benefactor of the college. It has a faculty of 12, and 91 students. Bates College (q. v.), located at Lewiston, was founded in 1863. It is named in honor of Joshua Bates, a benefactor of the college. It has a faculty of 7, and numbers 96 students.

Professional and Scientific Instruction.—Under this head are included *Theological Schools,* *Medical Schools*, and *Scientific Schools*, of which the following is an enumeration:—The Theological Seminary (Congregationalist) at Bangor, was organized in 1819. In the year 1875—6, it had 39 students. The Theological School of Bates College (Free Baptist) was organized in 1870. In the year 1875—6, it had 25 students. The Medical School of Maine was organized in 1820. By act of the legislature it is placed under the superintendence and direction of the Board of Trustees and Overseers of Bowdoin College. In the year 1875—6, it had 93 students. The Maine State College of Agriculture and the Mechanic Arts, situated at Orono, was established upon the basis of the congressional grant of public lands for such instruction. In the year 1875—6, it had in its various courses 115 students. The Scientific Department of Bowdoin College should also be named among the scientific schools. Its course of study is four years, parallel with the classical course, and its students, in 1875—6, numbered 50, already included in the enumeration of Bowdoin College.

Special Instruction.—There is a State Reform School for boys at Cape Elizabeth, and one for girls, at Gardiner. There is a Soldiers' Orphan School at Bath.

Educational Literature.—No works have been published upon the schools of Maine, except the reports of the secretary of the board of education and of the superintendent. The *Common School Advocate* (1849) was followed by the *Maine Teacher* (1858 to 1864). The *Maine Normal*, commenced in 1865, was followed in 1867 by the *Maine Journal of Education*, merged in the *New England Journal of Education* in 1875.

MANHATTAN COLLEGE, a Roman Catholic institution in New York City, under the direction of the Christian Brothers, was chartered in 1863. It comprises a collegiate, a commercial, and a preparatory department. The library contains about 10,000 volumes. In 1874—5, there were, in all the departments, 48 instructors and 694 students. Bro. Paulian is (1876) the president.

MANITOBA, a province of the Dominion of Canada; area 13,923 sq. m., population, in 1870, 11,963. This portion of the Dominion was first visited by the French, for the purpose of establishing trading posts at various points. In 1767, it was for the first time visited by English traders. It subsequently belonged to the Hudson Bay Company, who, in 1869, gave up their territorial rights to the imperial government, which, in 1870, transferred them to the Canadian government. The schools of this province are divided into two sections: one for Protestants, and one for Roman Catholics. Each section has its own superintendent, but there is only one board of education, in which both sections are represented. The forms of prayer prescribed in Ontario, and the reading of the Scriptures, or the saying of the Lord's Prayer are employed in opening and closing each session of the Protestant schools. The school hours are required to be not less than five per day, for five days in the week; and the school year is divided into two parts of 100 days each.—The legislative grant, which, in 1874, amounted to $7,000, is divided, according to law, between the two sections in proportion to the relative average attendance of pupils at the schools of each. In 1874, it was, however, for some reason, divided equally between the two sections. In 1874, there were 22 Protestant schools, with 1,248 pupils enrolled, and an average attendance of 635. The number of Catholic schools was 21, with 998 children enrolled, and 21 teachers.—The Manitoba Wesleyan Institute was opened in 1873. It prepares its pupils to enter any of the universities, the course of studies comprising, besides the common English branches, Latin, Greek, mathematics, French, and German. It is governed by a board of management, appointed by the Methodist Conference of Canada. Manitoba College, in Winnipeg, was incorporated in 1873. Its affairs are conducted by a board appointed by the general assembly of the Presbyterian Church. The curriculum of study of the college is divided into three courses: a regular, a commercial, and a special course. The regular course fits for matriculation, and for first-year examinations in the University of Toronto, for matriculation in law or medicine, as well as for entrance upon the courses of civil engineering and agriculture, and for commencing the study of theology in any of the Canadian colleges. A preparatory department has been organized in connection with the college. St. John's College, belonging to the Episcopal Church, has also a preparatory department and a theological school connected with it. The Roman Catholics have a college at St. Boniface; and the Sisters of Charity have also a large convent at St. Boniface, an academy for young ladies, an orphanage, and four missions in the province.—See MARLING, *Canada Educational Directory for* 1876; LOVELL'S *Gazetteer of British North America*, 1873.

MANN, Horace, one of the most celebrated of American educators, born in Franklin, Mass., May. 4., 1796; died in Yellow Springs, Ohio, Aug. 2., 1859. The cause of education in America is deeply indebted to this remarkable man. Rarely have great ability, unselfish devotion, and brilliant success been so united in the course of a single life. More rarely still, has the preparation for that success been made under such discouraging circumstances of poverty, want of opportunity, and ill health. To say that the childhood and youth of Horace Mann were passed in poverty, is only to repeat the story common to the early lives of very many eminent men. The degree of poverty, however, in his case, appears to have been exceptional; his biographer telling us "that it was the misfortune of the family that it belonged to the smallest district, had the poorest school-house, and employed the cheapest teachers, in a town which was itself both small and poor." The hard manual labor to which he was subjected giving him no time for recreation, in either summer or winter, weighed upon his naturally buoyant spirits, and left an ineffaceable impression on his memory. Many years after, he speaks of this want of happiness in his childhood as an "irretrievable misfortune." Left fatherless at the age of thirteen, he remained at home, with no opportunities for cultivation beyond those furnished by the few and unsuitable books of the household, and the ancient histories and theologies contained in a small library which had been given to his native town by Franklin. Always thirsting for knowledge, he declares that, up to the age of fifteen, he had never received more than eight or ten weeks' schooling in any single year. He remained at home till the age of twenty, eagerly treasuring up every thing that could add to his scanty store of information. About that time, having snatched some knowledge of Latin and Greek, and of English grammar from an itinerant schoolmaster, he presented himself, after six months of such intermittent schooling, for admission to the sophomore class in Brown University, and entered it in 1816. Illness—the consumptive habit bequeathed him by his father—now interrupted his work, and compelled him to leave. Poverty succeeded, requiring him again to absent himself during the winter, in order to teach school for his support while in college. In spite of these drawbacks, however, he graduated in 1819, with the first honors, conceded by the unanimous consent of both faculty and classmates. He immediately entered a law office; but had been there only a few months, when he was offered the position of tutor of Latin and Greek in the college he had just left. He accepted, principally on account of the facilities it gave him for self-improvement; and at once began a course of study, to be carried on simultaneously with his teaching. His method, in the latter, already foreshadowed his fitness for the teacher's vocation. In 1821, he resigned his position as tutor, and entered the law school at Litchfield, Ct., where he remained about a year. Leaving it, he was admitted to the bar in 1823, and immediately opened an office for the practice of law. During the fourteen years of his professional practice, the probity which was so marked a characteristic throughout his life, was always apparent. In 1827, he entered political life, having been elected representative for the district of Dedham, in which he resided; and to this office he was successively re-elected till 1833, when he removed to Boston, where, shortly after, he was elected to the state senate, serving four consecutive terms, during which time, he was twice chosen the presiding officer. Throughout his legislative career, Mr. Mann took an active part in all discussions relating to internal improvements, temperance, and education. The state lunatic asylum at Worcester was almost entirely his creation, he having suggested it, and carried it, almost single-handed, through the various stages of legislation. His services in this respect were so generally recognized, that he was appointed chairman of the board of commissioners for its erection, and, on its completion, chairman of its board of trustees. In 1835, he was appointed by the senate one of a committee to codify the statute laws of the state, and assisted in their publication. In 1837, the legislature appointed a board of education, to revise and re-organize the common-school system of the state. In view of the laborious duties inseparable from this work, the good judgment required for its successful issue, and the great length of time necessary for its completion, it was no ordinary compliment that, on the organization of the board, Mr. Mann was chosen its secretary. There is complete evidence, however, that he fully comprehended the magnitude of the work before him; but, having found, at last, a congenial field of labor, he did not hesitate. Recognizing the necessity of entire devotion to his new undertaking, and the necessity, also, of an unbiased position in regard to it, he declined re-election to the senate, left political life entirely, gave up all professional engagements, and placed himself simply in the position of a citizen of his native state. From this stand-point, he approached the work before him, and, for twelve years, applied himself solely to his duties as secretary. Notwithstanding the sacrifices he had made, however, for the purpose of freeing his work from any suspicion of partisan bias, the difficulties he had to encounter were appalling. The abuse of enemies, open and covert; the jealousies, not only of political partisans, but of religious denominations, educational associations, and private schools; the opposition of tax-payers; and, more than all, the deep-rooted conservatism, which, through indolence or ignorance, or both combined, resists all change, constituted a formidable opposition which might have well led him to decline the duties that now devolved upon him. On the other hand, the aid on which he was to depend was often lukewarm, seldom enthusiastic. His method of procedure was comprehensive and effectual. He began the publication of a periodical on his own account—*The Common-School Journal*, in which he gave in detail his views concerning general school management, and methods of instruction and training; while he visited all parts of the state, conferring with teachers, attending conventions, and delivering lectures and addresses. His most effective instrument, however, was the *annual report*, which the duties of his position required him to make to the board. In these reports, of which there are twelve, the entire subject of education is treated in a practical and exhaustive manner. The sound judgment, wide experience, and comprehensive grasp displayed in these papers, constitute them a classic on the subject of which they treat; while their clear and vigorous statements, apt illustrations, and felicitous style carry conviction even to careless readers, and amply justify his selection as the instrument for working out the great reform proposed. Their publication and broad-cast dispersion over the state, gradually changed the current of public opinion, and raised up friends in every quarter. Not without opposition, however, were all these changes effected. In 1840, in the midst of his manifold wearying and distracting labors, a bill was introduced into the legislature, calling for the abolition of the board of education, thus undoing the work of three years, and remanding the schools to their former condition. Happily the bill, though sustained by a majority of the committee, was defeated. The publication of his seventh annual report gave rise to a fierce opposition. Up to this time, his reports had treated the subject of education in a philosophical way, with a constant reference to first principles, and with illustrations drawn from the practical experience of every reader. His seventh report, however, gave the result of his observations in Europe, singling out Prussia for special commendation, and comparing her system of instruction with that of his native state, to the disadvantage of the latter. A rancorous hostility, founded on national jealousy, was the immediate result, and Mr. Mann found himself, his motives, and his work assailed by means of letters, newspapers, and pamphlets in the most violent manner. The result of this attack, however, was that the attention of the public was specially called to the subject under discussion, without impairing the work of the board, either in its extent or its efficiency. In 1848, Mr. Mann was elected to Congress to fill the vacancy caused by the death of John Quincy Adams; and, in November of the same year, was re-elected. In 1850, though failing of the nomination, he was elected again as an independent candidate. It was thought by many, perhaps by Mr. Mann himself, that by re-entering the field of politics at Washington, he might influence the government to establish a bureau of education either independently, or in connection with the Smithsonian Institution. This, however, was not accomplished. Leaving politics, therefore, he accepted the presidency of Antioch College, where he hoped to be able to effect something in the way of further reforms in the pursuit he had most at heart. In the organization of this institution, his shaping hand is again recognized; and the objects attained before his death, which happened a few years after, are said to have satisfied him of the feasibility of his plans. The great glory, however, of Mr. Mann's career—that which is now acknowledged to be his distinctive work—was the reform accomplished in the Massachusetts common and normal school system, during his labors in the board of education. His twelve annual reports led to many radical reforms, which extended beyond the borders of his native state; and the knowledge on the subject of education which they contain renders them a necessary part of every school library. Mr. Mann's other published works are: *A Few Thoughts for a Young Man* (1850); *Slavery, Letters and Speeches* (1851); *Lectures on Intemperance* (1852); *Powers and Duties of Woman* (1853); besides numerous reports, lectures, and addresses. A complete edition of his works with a biography (*Life and Works of Horace Mann*, 2 vols.) was published in Cambridge, in 1867; a selection from his works (*Thoughts selected from his Writings*), in 1869. A biography was published by his wife, MARY PEABODY MANN (Boston, 1865). His lectures on education were translated into French by Eugène de Guer, with a preface and biographical sketch, by Laboulaye (1873).

MANNERS, the genuine or simulated manifestations of disposition towards each other, which occur in the intercourse of human beings. The ordinary use of the word *manners* restricts it to those personal and visible peculiarities of deportment which characterize the intercourse mentioned. The agents commonly employed for this purpose are the eye, the voice, language, and gestures. When persons are brought together without previous knowledge of each other, or with no common ground of taste or experience between them, custom has prescribed a conventional code of formal manners, characterized as etiquette, which serves to relieve the awkwardness of the situation. That this, however, is temporary in character, and not intended to survive its original uses, is evident from the fact, that after it has, in great measure, been laid aside, any attempt to revive it, as the exclusive medium of kindly expression, is regarded as just cause for resentment. The fugitive character of mere etiquette can never constitute it an equivalent for that abiding kindliness of disposition which finds expression in genuine politeness. Manners, therefore, are more decidedly moral in their nature than a superficial observation would lead us to suspect; hence the usual association of "morals and manners." The basis of agreeable manners is that humanity, or feeling of brotherhood, which, in a greater or less degree, pervades the human race, and which every century, by its multiplied means of communication, is tending to extend and strengthen. It is, therefore, essentially Christian; and pleasant manners may be regarded, not as an accomplishment merely, but as one of the legitimate ends of a thorough education. In social intercourse, agreeable manners are far more powerful than intellectual accomplishments; while the displeasure produced by rude manners often neutralizes moral worth, and renders mental acquisitions, however great, comparatively useless. Momentous issues—even the destiny of a lifetime—may hang upon the apparently unimportant question of manners. To educate thoroughly, therefore, and neglect the means by which that education is to be made effective, is self-evident folly. Beyond the ordinary rules of etiquette, no set rules can be given for the production of good manners; since, in addition to the moral basis above referred to, they are largely dependent upon temperament; but, no precept is half so powerful in furtherance of this end, as the daily example of the teacher, the parents, or other persons with whom the pupil is brought into daily contact. The indirect though constant insistence upon the claims of every individual to respect and kindly attention, which results in a practical recognition of this by the pupil, together with the daily example referred to, constitute, perhaps, the most effective method for the grafting of agreeable manners on the conduct of the pupil.—See Gow, *Good Morals and Gentle Manners* (Cin. and N. Y., 1873). (See also MORAL EDUCATION.)

MANUAL LABOR SCHOOLS. See INDUSTRIAL SCHOOLS.

MAP-DRAWING. See GEOGRAPHY.

MARIETTA COLLEGE, Marietta, Ohio, was founded in 1835. It is supported by tuition fees and the income of an endowment of $115,000. The libraries contain 27,000 volumes. The cost of tuition is $38 per annum. There are several scholarships exempting the holders from the payment of tuition, and aid is extended to candidates for the ministry. The college has four buildings and valuable cabinets and apparatus. There is a preparatory and a collegiate department. In 1875—6, there were 9 instructors and 162 students, of whom 82 were of the collegiate grade. The number of graduates in the classical course is 421; in the scientific course, 11. The presidents have been as follows: the Rev. Joel H. Linsley, D. D., 1835—46; the Rev. Henry Smith, D. D., LL. D., 1846—55; and the Rev. Israel Ward Andrews, D. D., LL. D., the present incumbent, appointed in 1855.

MARYLAND, one of the thirteen original states of the American Union, having an area of 11,124 sq. m.; and a population, according to the census of 1870, of 780,894, of whom 605,497 were whites, 175,391 colored persons, 4 Indians, and 2 Chinese. In respect to population, the state ranks as the 20th.

Educational History.—In many counties of the state, free schools were established as early as 1723, when an act was passed "for the encouragement of learning, and erecting schools in the several counties of this province." Under it, a "public free school" was established at the county-seat of Calvert county (Battle Creek), which existed without a rival for fifty-two years. In 1775, another school was established at Lower Marlboro', the efficiency of which was, in 1779, increased by the addition to its funds of the proceeds from the sale of the buildings and lands of the first school. Though this is one of the earliest schools on record in the state, Talbot county claims to have had the first absolutely free school. Between the years 1750 and 1753, the Rev. Thomas Bacon established a charity working school in the parish of St. Peter, which continued in existence to the time of the Revolution, when the building in which it was kept, was converted into a home for the county poor. No general interest appears to have been aroused on the subject of education till 1825, when the legislature passed an act "to provide for the public instruction of youth in primary schools." The offices of state superintendent, county commissioners, and school inspectors were created by this law; and a system of public schools for the city of Baltimore was authorized to be established by the mayor and common council, for which purpose they were empowered to levy a tax. In 1827, the office of state superintendent was abolished. For some years from this time, little mention is made of the schools of the state, and little action was taken for their benefit outside of the city of Baltimore. In 1828, six school commissioners were appointed to establish a system of city schools. The next year, three schools were opened; the following year, two more, the highest number of pupils up to that time being 402. In 1839, the first high school was opened; and, in 1840, the number of common schools had increased to nine. In 1840, there were 127 academies or grammar schools, with 4,178 pupils; and 567 common and primary schools, with 16,982 pupils. In 1850, of 104,438 educable children in the state, only 34,467 attended school, for which there was annually expended $225,260. The school fund, in 1852, was $148,509. In 1864, the constitution gave a generous recognition to the cause of education, for the first time, by decreeing that free schools should be opened in every school district, and taught six months every year. A state board of education was created, consisting of the governor, lieutenant-governor, speaker of the house, and state superintendent. Local supervision was to be exercised by school commissioners, and an annual tax was levied upon the property of the state for the creation of a school fund. Acting on this suggestion, the state superintendent prepared a detailed plan for a system which was adopted in 1865, and continued in operation till 1868. It was then superseded, and the school system of the state has been variously modified since that time, principally in 1868, 1870, and 1872. Under the system established in 1865, Rev. L. Van Bokkelen was the state superintendent; and on the change of the system, in 1868, M. A. Newell, principal of the state normal school since 1865, became, by the operation of the law, the state superintendent. This position he still holds (1876).

School System.—The care of the schools, at present, is confided to a state board of education which consists of the governor, the principal of the state normal school, and four persons appointed by the governor with the consent of the senate. These four persons are appointed for two years, and must be chosen from among the presidents and examiners of the county boards, one of whom must be a resident of the eastern shore. The members of the board are, *ex officio*, trustees of the state normal school. The principal of this school is the executive officer of the board, his office corresponding to that of state superintendent. The boards of county school commissioners consist of three, or five members, according to the size of the county, who are appointed for two years by the judges of the circuit courts. They elect a person, not of their number, to act as secretary, treasurer, and examiner, and when necessary, an assistant examiner in the larger counties. The county commissioners fix teachers' salaries, and decide what text-books shall be used. District school trustees, three in each district, are annually appointed by the county commissioners. They have the more immediate supervision of the schools in their respective districts, subject to the county commissioners and the state board. A special board of trustees is appointed by the county board for each colored school. County examiners are required to visit the schools under their jurisdiction at least twice every year, and to make quarterly reports to the county board. Teachers must be graduates of the normal school, or have a certificate from the state board, or the county examiner. Teachers' institutes must be held, once a year, for five days, in each county. For this purpose, time is allowed from the school session, and a portion of the traveling expenses is paid. These institutes are presided over by the county examiner, or by the principal or a professor of the normal school. The law, also, encourages associations in districts and counties, and state teachers' associations. One school, in each district, must be kept open ten months each year, the sessions, of five hours each, to be held five days of each week. The school age is from 6 to 21 for whites, and, in the city of Baltimore, from 6 to 20 for colored persons. For the latter, separate schools have been established in each election district. These are supported by state appropriations, private gifts, and special taxes for the purpose levied upon the colored people.

The school revenue is made up of a state school tax, a free-school fund, an academic fund, and a county tax. The state tax is limited to ten cents on the $100; the county tax is levied by the county officers at a rate varying from ten to twenty-five cents on the $100.

Educational Condition. — The number of schools in the state, in 1875, was 1,846,—in the city of Baltimore, 125; and in the counties, 1,721. The other principal items of *school statistics*, for 1875, are the following:

Number of different pupils enrolled		143,003
Highest number enrolled in one term		112,399
Average attendance		69,259
Number of teachers		2,723
Receipts (except city of Baltimore):		
State school tax	$336,110.11	
Appropriations to colored schools	81,170.16	
County taxation	368,962.39	
Other sources	135,757.51	
Total		$922,000.17
Expenditures (counties):		
Teachers' salaries	$609,035.07	
Buildings, repairs, etc.	105,175.65	
Other expenses	209,898.23	
Total		$924,108.95
Expenditures in the city of Baltimore		716,938.82
Total in the state		$1,641,047.77

Normal Instruction.—A state normal school was established in Baltimore in 1865, to which 200 pupils, upon the recommendation of the city or county commissioners, are admitted free, if intending to teach in the state; otherwise, payment for tuition is required. An appropriation of $100,000 has recently been made by the legislature for a new building, which is now in process of erection. The number of instructors, in 1874, was 10; number of pupils, 174,—9 males, 165 females. The number of graduates was 21. There is also a normal school for the education of colored teachers, which was organized in 1866. It received, in 1874, an appropriation of $2,000 from the state. The number of instructors was 4; number of pupils, 246,—115 males, 131 females. The number of graduates was 5. There has been formed, also, in Baltimore, a normal class for the schools of that city, which has received very favorable notice from the school board.—*Teachers' institutes* constitute a part of the system. Fourteen were held, during 1875, in different counties. The principal of the state normal school or the local examiner is, by law, the presiding officer, the tendency to substitute the latter officer for the former increasing as the number of competent examiners increases. "The good results of the institutes," says the annual report for 1875, "have been as marked in Maryland as in any other state of the Union."

Secondary Instruction.— The provision for this purpose, by the establishment and maintenance of high schools, has been somewhat retarded by the existence of the old academies of the state which, by receiving from the state annual appropriations too small to maintain them in a condition of efficiency, and yet too large to permit of their extinction, act as a bar to progress in the means of secondary instruction. The old law provides that each academy shall educate one pupil free of charge for every $100 received from the state. This was intended to encourage the academies, and, at the same time, to educate a few of the most deserving poor. The first object seems not to have been attained, at least not to the extent expected; while the second has failed entirely, on account of the establishment of the public schools. Another result has been, that these academies have become, in many cases, entirely anomalous in character, holding, in some places, the position of elementary schools, in others, that of high schools, so that it is difficult to classify them in the school system of the state. The city college of Baltimore is the principal high school of the state. It numbers 10 professors and 400 students. Its English course, alone, furnishes a good commercial education; while the full course is an ample preparatory one for entrance into any college or university. Two female high schools are also located in Baltimore, with 30 teachers, and an attendance of 761 pupils. Their courses of study are for four years each, and give instruction in the ordinary branches of a good English education, besides the accomplishments of drawing and music. Many other academies and secondary schools exist in the state; but the reports from them are incomplete or entirely wanting. In 1874, as far as heard from by the U. S. Bureau of Education, they gave employment to 243 teachers, and had an attendance of 3,694 pupils. There are, throughout the state, a number of private schools and academies, the courses of study in which are various, furnishing all degrees of preparation, from that necessary to enter commercial life to that required for admission to college.

Denominational and Parochial Schools.—Several of these exist in the state, but from the amount of instruction imparted, they are more properly classed under the head of schools for secondary instruction.

Superior Instruction. — The following table contains the principal institutions of this grade.

NAME	Location	When founded	Denomination
College of St. James	St. James	1842	M. Epis.
Frederick College	Frederick	1797	Non-sec.
Johns Hopkins University	Baltimore	1876	Non-sec.
Loyola College	Baltimore	1852	R. C.
Mt. St. Mary's College	Emmettsburg	1808	R. C.
Rock Hill College	Ellicott City	1867	R. C.
St. Charles's College	Ellicott City	1848	R. C.
St. John's College	Annapolis	1789	Non-sec.
Washington College	Chestertown	1783	Non-sec.
Western Maryland College	Westminster	1867	M. Prot.
Woodstock College	Woodstock	1867	R. C.

St. John's College reported, in 1874, 11 professors, 130 students, and 8 graduates. Its course is the usual collegiate one of four years. Six scholarships are provided at this college for each senatorial district, the holders of which are entitled to rent of room and tuition free; and board is furnished free to two of them from each district, who agree in return to teach in the state, after graduation, not less than two years. For the latter purpose, $10,000 of the $25,000 annually appropriated by the state, is devoted. The Western Maryland College reported 13 professors and 131 students, of whom 61 were females, for whom there is a three years' course of study. This college also, has several state scholarships. Washington College had 2 professors, 27 students, and 3 graduates. It supports 6 state scholarships as provided by the act of 1874. Mt. St. Mary's college had, in 1873—4, 13 professors, and 182 students. Besides the usual collegiate course, it has a theological course, in which 34 students, in addition to the number above mentioned, received instruction. St. Charles's College had 12 professors and 180 students. It is intended only for students proposing to enter the church. Woodstock College, with 102 students, is exclusively Roman Catholic. For additional information in regard to these institutions, see the respective titles. In 1874, six institutions claiming to be colleges for women, were reported to the U. S. Bureau of Education. They numbered 58 instructors and 664 students.

Professional and Scientific Instruction.—The Agricultural College in Prince George's Co. was established in 1865, with a fund of $110,000, the proceeds of 210,000 acres of land, granted by Congress to the state. It has a farm of 300 acres connected with it, and furnishes partial tuition free to twelve students from each congressional district. It has a preparatory and a collegiate department, and has 9 professors and 91 students. Mt. St. Clement's College, at Ilchester, and St. Mary's Theological Seminary, at St. Sulpice, both Roman Catholic, afford instruction in theology, besides the theological departments of the other colleges. A school of law forms a part of the University of Maryland, while the professions of medicine, surgery, etc., are represented by the College of Physicians and Surgeons, and the College of Dental Surgery, at Baltimore, the Maryland Dental College, the Maryland College of Pharmacy, and the schools attached to the Washington University and the University of Maryland.

Special Instruction.—The Institution for the Education of the Deaf and Dumb was opened at Frederick, in 1868, and, in 1874, had 11 instructors of all kinds, and 104 pupils, of whom 68 were males, and 36, females. The course of study extends over seven years, and comprises the branches usually taught in the public schools, together with instruction in several kinds of manual labor. The study of written language receives special attention. It is found that comparatively few of the pupils remain to complete the course. The whole number of pupils instructed in the institution since its opening is 146; of these the number who have engaged in teaching in similar institutions, is very small.—The Institution for the Instruction of the Blind at Baltimore was organized in 1853. Pupils between the ages of 9 and 18 are received, and may be educated free, upon the recommendation of the governor. The instruction afforded is that of a common-school course, with special instruction in vocal and instrumental music. Such branches of trade or manual labor also are taught as are specially suited to the condition of the blind. The value of its grounds, buildings, and apparatus is estimated at $255,000. The Maryland Institution for Colored Blind and Deaf-Mutes was established in 1872, in Baltimore. The faculty consists of 4 instructors. The number of pupils during the year 1874 was 12,—5 males and 7 females.—The McDonough Institute was organized in 1873 by private munificence to give "instruction in the Christian religion, a plain English education, music, and the art of husbandry or farming to poor boys of good character, of respectable associations in life, residents of the city of Baltimore." It has an endowment fund of $725,000, with which it is estimated that 250 boys can be maintained and educated; special instruction in religion, and useful branches of manual labor, in addition to that given in the English branches, is provided for colored girls by the St. Francis Academy of Baltimore. It was established by the Oblate Sisters of Providence, a religious order founded in 1825. The Peabody Institute, with an original endowment of $300,000, afterwards increased to $1,000,000, is located in Baltimore, and furnishes facilities for advanced instruction in art, by means of a library, a gallery of paintings, and yearly courses of concerts and lectures.

Teachers' Associations.—The Maryland State School-Teachers' Association has been in existence about ten years. It holds an annual convention at some convenient point in the state for the discussion of such questions as pertain to the welfare of the teachers, or the cause of education. Day and evening meetings are held, the exercises consisting of debates upon subjects affecting the schools, recommendations of improved methods of instruction, and listening to papers previously prepared by members designated for the purpose, or to casual addresses by distinguished educators from other states.

MARYVILLE COLLEGE, at Maryville, Tenn., founded in 1819, is under Presbyterian control. The grounds comprise 65 acres, beautifully situated, and contain three new buildings, erected at a cost of $50,000. The college has a library of 3,000 volumes, and valuable chemical and philosophical apparatus. It comprises a collegiate, a preparatory, a normal, a ladies', and an English course. In 1875—6, there were 8 instructors and 137 students, of whom 27 were of collegiate grade. The Rev. P. M. Bartlett, D. D., is (1876) the president.

MASON, Lowell, an American composer and teacher of music, born in Medfield, Mass., January 8., 1792; died in Orange, N. J., August 11., 1872. He manifested, at a very early age, a fondness for music, and adopted it as his profession, teaching it successfully and organizing choirs and musical associations. In 1821, he made his first effort at musical publication, the *Boston Handel and Haydn Collection of Church Music.* In 1827, at the instance of several gentlemen interested in the improvement of church music, he removed from Savannah to Boston, where he devoted himself more particularly to the training of children's voices. His efforts were highly successful, resulting in a general awakening, to the value of music, of the community in which he dwelt, and paved the way for its introduction into the school system of the city and state, and to the formation of the Boston Academy of Music. Mr. Mason had been successful for many years, as a practical teacher of vocal and instrumental music, by the use of what is now known as the arbitrary or text-book method, when, about 1827, at the instance of his friend Mr. Woodbridge, he turned his attention to the method of Pestalozzi. For a long time, he resisted its conclusions, his own method, pursued with success for many years, appearing to furnish a practical refutation of its utility. He consented, at last, however, to make the experiment of publicly teaching a class according to the new method; and the success attending it was so great, that he frankly accepted the result as conclusive, and always afterwards pursued it, continuing the practice for more than thirty years. A lecture given in 1830, by Mr. Woodbridge, before the American Institute of Instruction, illustrated by a class of Mr. Mason's pupils, called renewed attention to the subject of music, and led to the formation of large classes among the children of the public schools, in which the study of music has now become a striking feature, and from which it has spread throughout the state and the Union. In 1837, Mr. Mason visited Europe, where he examined the different systems of musical instruction, with a view to improvement. The result of his observations, however, was to confirm him in his opinion of the wisdom of the method of Pestalozzi; and, on his return, he applied the method more carefully and rigorously than before, with the most satisfactory results. In 1855, the University of New York conferred on Mr. Mason the degree of Doctor of Music.

MASSACHUSETTS, one of the thirteen original states of the American Union, having an area of 7,800 sq. m. and a population, according to the census of 1870, of 1,457,351, of whom 13,947 were colored. Though ranking, according to population, as the 7th state in the Union, and in size as the 35th, its influence has always been very great in every thing that pertains to education, literature, and general improvement.

Educational History.—This topic will be treated under the three following heads: (I) The establishment of schools; (II) The mode of maintaining them; (III) The mode of supervising them.

I. As far back as 1635, the people of Boston expressed by vote their appreciation of the need of a school, and requested "Brother Philemon Purmont to become school-master for the teaching and nurturing of children." The following year, a small subscription was made by some of the citizens for the maintenance of a school, Daniel Maud being chosen to conduct it. The general court, also, authorized an appropriation of £400 for the establishment of a "schoole or colledge whereof £200 to bee paid the next yeare, and £200 when the worke is finished, and the next court to appoint wheare, and what building." The next year the court directed that the college should be established at Newtown. The first educational ordinance of the colony is dated in 1642. By it, the selectmen of every town are enjoined to have a "vigilant eye over their brethren and neighbors, to see, first, that none of them shall suffer so much barbarism in any of their families as not to endeavor to teach, by themselves or others, their children and apprentices so much learning as may enable them perfectly to read the English tongue, and knowledge of the capital laws, upon penalty of twenty shillings therein." By the law of 1647, it was ordered by the court, that every township of fifty householders should appoint one of their number to teach all children that might be sent to him to read and write, the wages of such teacher to be paid either by the parents or guardians of the children sent, or by the inhabitants in general; the penalty attaching to the disregard of this ordinance for one year to be £10. It was also ordered that every town of one hundred families should maintain, in addition to its common school, a grammar school for the fitting of pupils to enter the university. In 1650, Ezekiel Cheever came to reside in Ipswich, taking charge of the grammar school there. In 1661, he removed to Charlestown, and became principal of the Town Free School, which position he filled till 1670, when he removed to Boston, where he took charge of the first school founded in the state, continuing his labors there thirty-eight years. From 1650, the time of his teaching in the Ipswich school, which he made "famous in all the country," down to 1708, he contributed powerfully to the fame of Massachusetts as an educational center, and encouraged, more than any other man, that love of learning, the practical activity in behalf of which has always been a characteristic of the state. (See CHEEVER.) Further enactments were made, from time to time, as required by the wants of the growing colony. Thus, in 1683, all towns of five hundred families where required to maintain two grammar schools and two writing schools; and any town failing to support a grammar school, was required to pay at first £10, and afterwards £20 to the nearest school kept in compliance with the law. During the provincial period, these laws substantially were kept in force. The constitution of 1780 made special mention of the importance of education; and after the revolution, when new townships were created, a lot was reserved in each for a school. In 1789, a general act of the legislature directed that, in every town, schools should be maintained in which children should be taught to read and write, and to receive instruction in the "English language, arithmetic, orthography, and decent behavior." It was further directed that towns should be divided into school districts which were afterwards erected into corporations, with power to sue and be sued, and to hold property for the use of the schools; that towns of 200 families, instead of 100, as before enacted, should constitute the basis for the maintenance of grammar schools; that the teacher should have a certificate of good moral character; and, lastly, that pupils should be permitted to pass from the common school to the grammar school after a certain proficiency had been attained. For the violation of this law, penalties in money were imposed, graduated according to the size of the towns disobeying. In compliance with this law, the town of Dedham was, in 1818, indicted, tried, and convicted for neglecting for a year to keep and support a grammar school for the instruction of children in the Greek, Latin, and English languages. This was the first law in which women were recognized in Massachusetts as teachers. In 1824, the law was modified somewhat in favor of towns having a population of less than 5,000, the maintenance of a grammar school being waived in this case, and a common school being accepted in its stead, if the inhabitants so desired. In 1832, incomplete returns showed that the sum of $1.98 per pupil was the average annual expenditure; and, in 1834, it was ascertained that five-sixths of the educable children of the state received instruction in the public schools, the remainder attending private schools. In this year (1834) a law was passed prohibiting children under 15 years of age from working in factories, unless they had attended school for at least three months during the preceding year. In 1837, the state board of education was created, and Horace Mann was elected its secretary (June 29., 1837). It was made the duty of the secretary, "to collect information of the actual condition and efficiency of the common schools and other means of popular education; and to diffuse as widely as possible, throughout every part of the commonwealth, information of the most approved and successful methods of arranging the studies and conducting the education of the young." Up to that time, though much had been done, throughout the state, for the cause of education, the great lack of uniformity, in system and action, had deprived the results of much of their practical usefulness. This uniformity the board set itself vigorously to work to supply. Mr. Mann, in particular, labored long and earnestly for the attainment of this object, withdrawing himself entirely from politics and the practice of his profession, and devoting himself for twelve years to the work. (See MANN, HORACE.) The result of the labors of the board was a uniform common-school system, which was adopted by the legislature, and which has continued in force to the present time. In 1839, two normal schools were opened, — one at Lexington, and the other at Barre. These were first designated *state normal schools* in 1842; and their number has been increased gradually, according as a necessity for their establishment has been recognized. In 1846, the first law making education compulsory in this state was passed; being rendered necessary, in the opinion of the legislature, by the fact that the number of persons in the state who were unable to read and write was rapidly increasing, the presence of which class had always been regarded with distrust. Previous to 1819, accurate information in regard to the schools had not been obtainable; but, in that year, a law was passed, specifying that the income of the permanent school fund should be apportioned among those cities, towns, and districts only which had raised by taxation the sum of $1.50 for the education of each child between the ages of 5 and 15 years. By thus making the amount raised for each child the unit of apportionment, definite statistical information as well as accuracy of appropriation, was insured. Various changes and amendments of minor importance were made in the school laws from this time to 1857, when the state constitution itself was altered in the interest of free non-sectarian education. By this amendment it is provided, that "no person shall have the right to vote, or shall be eligible to office under the constitution of this commonwealth, who shall not be able to read the constitution in the English language, and write his name, unless prevented by physical disability from complying with the requirement, and unless he already enjoys the right to vote. All moneys raised by taxation in towns and cities for the support of public schools, and all moneys appropriated by the state for the support of common schools, shall never be appropriated to any religious sect for the maintenance exclusively of its own schools." In 1869, upon petition of several citizens of the state, an act was passed amending a previous act so as to include drawing in the common-school course, and providing, in addition, that every city and town having more than 10,000 inhabitants, should make annual provision for giving free instruction in industrial and mechanical drawing to pupils over fifteen years of age.

II. There have been five sources of income for the support of schools and colleges: (1) Individual gifts; (2) Tuition fees, or rate bills; (3) Taxes; (4) The income of permanent funds; (5) Special appropriations.

(1) *Individual Gifts.*—The first mention made in the history of the state, of a fund for the establishment of a school, was that of a gift, in the shape of a subscription, made in 1636, by several wealthy citizens of Boston, for the school, of which Daniel Maud was teacher. This example was followed, in 1638, by the Rev. John Harvard, who bequeathed £779 and a library of 300 volumes to the college already founded at Newtown. A year after, the name of Harvard College was given to it in his honor; and the name of Newtown was changed to Cambridge, in compliment to the English university of that name, of which some of the settlers were graduates. Since that time, the history of education in the state, particularly since the Revolution, is adorned by continual gifts made by enlightened citizens for the establishment, maintenance, or improvement of schools or colleges. Chief among these benefactors may be mentioned, Samuel Appleton, John Lowell, jr., Amos Lawrence, Abbott Lawrence, Nathaniel Thayer, Edmund Dwight, and George Peabody. Probably no state has produced a larger number of pecuniary contributors to the cause of education.

(2) *Tuition Fees.*–The earliest method employed for the payment of the teacher was that of a fee charged to each parent or guardian, according to the number of children sent. This method continued in force for a century and a half after the first school law was passed. Even after towns were compelled by law to maintain a free school by a special yearly tax, the original method was continued in many country districts down to a very late day. These fees took different forms according to locality, in the cities and large towns being usually in money; in the country, consisting of board for the teacher, contributions of fuel, etc.

(3) *Taxes.*—The first educational law passed by the colony — that of 1647 — provided that the teacher should be paid either by the parents or masters of the children taught, or by "the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided that those that send their children be not oppressed by paying much more than they can have them taught for in other towns." Through every period of the subsequent history of this state, taxation has been, to a considerable extent, resorted to as a means of supporting schools. As already stated, the towns were obliged, under stringent penalties, to support schools; and this, of course, could only be effected by paying taxes. In 1827, the legislature, in the school law of that year, authorized the towns to raise as much money as they might deem necessary for school purposes. The method of raising money for the support of public schools has varied from time to time, but the plan generally adopted prior to the establishment of the school fund, in 1834, was by taxation of the polls and estates of the people of the towns and school districts, without any substantial aid from the government. Since the establishment of the school fund, more or less aid has been furnished by the state for the support of the common schools. During the period from 1835 to 1845, the amount raised annually by tax for the wages of teachers advanced from $325,320 to $600,000. The statute of 1839 required that $1.25 should be raised for every child between the ages of 4 and 16, and actually expended for the purpose of instruction in each town; but, in 1845, more than $3 for every child of that age was actually raised by tax in 53 towns, and more than $2 in 190 towns, the average being $2.99.

(4) *The Income of Permanent Funds.*—The first trace of any thing like a permanent fund for school purposes is found at a very early day, when the public money derived from the Cape Cod fisheries was applied to the maintenance of schools. The revenue from this source was, of course, uncertain; but the intelligence of the people seems to have been relied on to furnish, from time to time, by special act of the legislature or direct taxation, whatever funds were necessary, till 1834, when a most important step was taken for placing the public school system of the state on a firm financial basis, by the establishment of a permanent school fund. Chapter 169 of the laws of that year provided that this fund should consist of the amount in the treasury derived from the sale of lands in the state of Maine, with fifty per cent of all money to be received from the sale of lands in the same state after January 1., 1835; and all money derived from the claim of the state on the government of the United States for military services and not otherwise appropriated. This fund was not to exceed $1,000,000, and the income only was to be used for the support of common schools; no city, town, or district receiving more than it had raised for the same purpose. This created almost immediately a permanent fund of $500,000, which was increased from that amount, in 1835, to $800,000, in 1845. At the close of the year 1850, the amount of the fund was upwards of $986,000; at the end of 1853, it had been increased, by the sale of lands in Maine, to $1,244,284; in 1854, it was $1,501,743.62. In 1859, this fund was further increased by the proceeds derived from the sale of public lands in Boston. At the end of 1863, it amounted to $1,870,970; in 1864, to $2,196,827.18; and at the close of 1874, $2,117,732.82. By an act of the legislature, passed in 1854, one half of the income derived from this fund is applied to the support of the common schools, the other half being used for the maintenance of normal schools, teachers' institutes, repairs of school buildings, the salary of the secretary of the board of education, printing, etc. Any surplus, remaining after the payment of expenses, is to be

added to the fund. For some time, the principal of the fund was increased by these unexpended balances, but at present this is not the case. By a liberal interpretation of the law, various sums of money were, from time to time, drawn from the income of the permanent fund for the purpose of aiding, in an indirect, way new normal schools, till it was discovered that the income was becoming insufficient, and the half devoted to the support of common schools was being encroached upon. This was due to the increase in educational wants produced by the growth of the state in population, and has been remedied, from year to year, by special acts of the legislature.

(5) *Special Appropriations.*—The first special appropriation made for educational purposes was that of 1636, by which £400 was devoted to the founding of a school or college. The appropriations from that time to the present have been many, and for various purposes, and have increased rapidly in number with the growth of the state, being most frequent as we approach the present time. Thus, in 1836, the foundation of school libraries was made secure by an act of the legislature, which authorized the expenditure, in each school district, of $50 the first year, and $10 each succeeding year, for their establishment and maintenance. In 1837, $10,000 was appropriated for the establishment of two normal schools, a like sum having been contributed for the same purpose by Hon. Edmund Dwight; and, in 1842, $6,000 was appropriated annually for three years to continue these schools. In 1873, a special act of the legislature set apart the sum of $7,500 to establish a state normal art-school in Boston.

III. The supervision of the common schools of the state appears to have been committed to the selectmen at the first, afterward (in 1826) to school committees appointed in the different towns. In 1837, the reorganization of the public-school system was undertaken by the board of education. The secretary of the board, Horace Mann, in his first annual report, makes special mention of the unsatisfactory manner in which the schools were supervised, laying great stress upon the need of properly qualified school committeemen. "They occupy," says the report, "a controlling position in relation to our common schools. They are the administrators of the system; and, in proportion to the fidelity and intelligence exercised by them, the system will flourish or decline." One of the most important duties imposed upon the school-committees (by the law of 1826) was to obtain evidence of the good moral character of all instructors, and to ascertain their "literary qualifications and capacity for the government of schools." The law expressly required every teacher to obtain, from the school committee of the town, a certificate of his qualifications before opening the school. The laxity with which this part of the law was enforced received severe animadversion from Mr. Mann, in the report above referred to. The employment by the board of education of *state agents* constitutes a peculiar feature of the Massachusetts system. Their duties, as defined by the general statutes of the state, are "to visit the several towns and cities, for the purpose of inquiring into the conditions of the schools, conferring with the teachers and committees, and lecturing upon subjects connected with education." In 1850, the legislature appropriated $2,000 to the board for this purpose; and accordingly, six agents were employed to visit the towns in the early summer. Among these, were N. P. Banks, and S. S. Greene, the latter afterwards of Brown University. The experiment was eminently successful; and accordingly, the legislature, in 1851, made a similar appropriation for two years, which was renewed in 1853, 1855, and 1857, with the authority in the last instance to expend a sum not exceeding $4,000 in one year. B. G. Northrop was sole agent from 1860 to 1867, when he was succeeded by Abner B. Phipps, who has continued in office till the present time (1876). The legislature of 1871 made a special appropriation of $10.000, for this purpose, payable from the "moiety of the income of the school fund appropriated to general educational purposes." This opened a way for the employment of a *state director of art-education*, to which position Walter Smith was appointed in 1871. In 1875, the legislature made an appropriation, for the same purpose, of $14,000, payable from the state treasury, and thus enabled the board to increase the number of its agents.—The following named persons have filled the office of secretary of the board of education since its creation in 1837: Horace Mann, until 1848; Barnas Sears, from 1848 to 1855; George S. Boutwell, from 1855 to 1861; Joseph White, from 1861 to the present time (1876).—*Teachers' Institutes* were first organized in 1845; and, in 1846, the legislature for the first time made an appropriation for their support.

In 1850, the first *truant law* was passed, which simply authorized the towns to make needful by-laws concerning habitual truants, and required the towns that availed themselves of the act to appoint truant officers empowered to carry the law into execution. This law was amended in 1862, making it obligatory upon the towns to enact by-laws concerning truants; and such is the law at present. An amendment, made in 1873, requires the school committee, instead of the town or city, to appoint the truant officers, and fix their compensation. This is the duty of the committee independently of the action of the town; since there are other laws besides those relating to truancy which only the truant officers can execute.

School System.—The control of the educational interests of the state rests immediately with the legislature. All information, however, in regard to the schools, colleges and other institutions of learning, on which its action is based, is derived from the annual report of the *state board of education*, which is composed of the governor, lieutenant governor, and eight persons appointed by the governor, who hold office for eight years, one retiring each year. To this board is entrusted the care and management of the school system, subject to the enactments of the legislature, to whom the board annually reports its proceedings and the condition of the schools.—The *secretary of the board* is its chief executive officer, performing the duties usually devolving upon the superintendent of public instruction in other states. There is also a *general agent* and such other agents as the board may deem necessary, whose duties are to visit the schools, deliver lectures, confer with school committees and teachers, and generally to act as representatives of the secretary.—Each town elects a *school committee* consisting of three persons (or any multiple of three), whose duty it is to superintend the public schools in the town, apportion the school money among the schools or districts, examine and license teachers, select the text-books to be used, and visit every school once a month during the school session, and make an annual report to the town or to the board of education. For this service they receive not less than one dollar for each day actually spent in the performance of their duties, with whatever additional compensation may be allowed by the town. In the cities and some of the larger towns, the school committee appoints a superintendent, who, as its agent, performs most of the duties above enumerated. The salary of the superintendent is fixed by the school committee, who by appointing this officer relinquish all claim to compensation for their own services.—*Prudential committees* are elected in some of the towns, consisting of one person in each district, who must be an actual resident. The duties performed are similar and supplementary to those of the town school committee.—Parents and guardians are required, under a penalty of $20, to send their children between 8 and 12 years of age, to school at least 20 weeks each year, six weeks of which must be consecutive. The only exemptions are cases of poverty, physical or mental incapacity on the part of the child, or when the child is otherwise provided for. The *truant officers* are required to see that truant children, absentees from school, and vagrants, are sent to school; and the education of orphans and the children of drunken parents is compulsory on the cities and towns in which they reside.—The school age is between 5 and 15 years; and the public schools of the state are free to all persons of school age, without regard to religion, race, or color.—The daily reading of a portion of the Scriptures is required in every school.—The *school fund*, which, on the 1st of January 1876, amounted to $2,065,238.80, is in charge of a board of commissioners, consisting of the secretary of the board of education, and the treasurer and receiver-general. One moiety of it is distributed among the towns in proportion to the school population of each, and the other is applied to the support of normal schools, teachers' institutes, etc. A special fund is provided for the education of Indians.

Educational Condition. — The number of elementary public schools in the state, in 1875, was 5,551; the number of high schools, 208; of evening schools, 99; incorporated academies, 63; of private schools and academies, 369; of schools in state charitable and reformatory institutions, 12; making a total of 6,302 schools. The estimated value, as returned by committees, of school-houses and grounds, was $20,856,777.50.

The amount of money received for the support of the schools was as follows:

Income of state school fund.	$88,613.45	
Amount raised by taxation, including only wages of teachers, fuel, and care of fires and school rooms....	4,358,523.59	
Income of funds appropriat'd for the support of public schools at the option of towns....................	52,050.31	
Voluntary contributions of board, fuel, apparatus, etc.	30,787.32	
Income of local fund.......	120,286.32	
		$4,650,260.99
Expenditures on public schools alone, exclusive of the repairing and erecting of school-houses and the cost of school books..............................		$4,668,472.09
Amount expended in 1874 for erecting school-houses..............................		$1,148,133.65
Average wages per month, male teachers.		$88.37
" " female teachers..........		$35.35

The other most important items of the *school statistics* for the year 1874—5 are the following:—

Number of children of school age........		294,708
No. of all ages, enrolled in the public schools..............................		302,118
Average attendance during the year		216,861
Number under 5 years of age enrolled....		2,383
Number over 15 years of age enrolled....		32,986
Number of teachers, males.............	1,169	
" " " females...........	8,047	
Total.............		9,216
Average length of school term		8 mo. 17 days

Normal Instruction.—There are five normal schools in the state, exclusive of the Normal Art-School in Boston. The first two were established in 1839, at Lexington and Barre, but were afterwards removed,—the first to Newton, and afterwards to Framingham; the second, to Westfield. Three have since been established,—at Bridgewater, Salem, and Worcester.

The normal school at Framingham was opened in 1853, and is exclusively for females. The number of pupils in attendance, during the year 1874—5, was, the first term, 117; the second term, 116; the number of graduates was 35. The normal school at Salem is also for females. The number of pupils, in 1874—5, was, first term, 211; second term, 228; number of graduates, 58. The normal school at Bridgewater is for both sexes. The number of pupils, in 1874—5, was, first term, 151,—37 males, 114 females; second term, 160,—45 males, and 115 females; number of graduates, 49,—9 males, and 40 females. The normal school at Westfield is for both sexes. The number of students in attendance was, winter term, 135,—11 males, 124 females; summer term, 126,—11 males, 115 females; number of graduates, 42,—3 males, 39 females. The normal school at Worcester was established in 1874. The number in attendance the first year was 93. The intention is to make these schools complete, in all aids to a higher education, with special reference, however, to the career of the graduates as teachers. For this purpose, libraries, laboratories, cabinets of specimens, and courses of lectures have been provided; and each of the schools is visited annually by a board of visitors who report to the secretary of the state board of education. — The Normal Art-School, at Boston, was established in 1873, and grew out of the necessities first made apparent by the attempt to carry out the law of 1870, which provided that every city or town containing more than 10,000 inhabitants should establish and maintain a school for the teaching of mechanical and industrial drawing. This law was inoperative from the want of competent teachers to conduct such schools; and with the view to supply this want, the Normal Art-School was founded. The number of pupils the first year was 133. This number was increased, in the second year, to 239,—84 males, and 155 females. The establishment of this school was in answer to a petition made to the legislature by the manufacturing and mechanical interests of Boston, in which it was represented that those interests were suffering from a lack of skilled employés. The ease with which graduates from this institution have found employment since their graduation is considered ample proof of the wisdom shown in its establishment.—*Teachers' Institutes* were first organized in 1845. From this time to 1874 inclusive, 242 institutes have been held, averaging 8 annually. The annual average attendance has been 1,060, or 133 at each institute. The average cost of each institute is about $3,000; average cost of each teacher attending, between $2 and $3; total annual cost to the state for eight institutes, about $2,550.

Evening Schools.—In addition to the schools for primary instruction enumerated, there are evening schools in many of the large towns and cities, the opportunities afforded by which are eagerly sought by many whose early educational privileges have been neglected. The reports annually made in regard to them show a larger attendance of adults than in other schools, and of pupils of both sexes, drawn principally from the mechanical and laboring classes. Their sessions being short, and held generally during only the winter months, and the attendance being fluctuating, the results are, of course, not as satisfactory as in other schools. The instruction imparted also is necessarily elementary in character. By an act of the legislature, in 1870, all towns and cities of 10,000 and over are required to support free evening drawing schools; and 23 schools of this class are now open.

Secondary Instruction.—The number of high schools, incorporated academies, and private academies in the state has already been stated as 208, 63, and 369 respectively. Of 151 towns numbering over 500 families, and therefore required each to maintain a high school, 6 only had failed to comply with the law, while 40 such schools were maintained in 38 towns not required to do so. The high schools are of various degrees of excellence, ranging from about that of the ordinary grammar school to that of the best preparatory school for admission to college. It is estimated that about one third are of this latter class, students passing from them into college without difficulty. The former class numbers also about one third, their condition of comparative inferiority being attributed to the want of teachers and apparatus, and to the mixed character of the pupils. The remaining, or middle third, furnish their pupils with only a tolerable preparation for college, but with a good English education. The state includes among its academies and private schools, a very large number of institutions for the education of girls. All these various schools draw their pupils largely from other states, the high reputation of Massachusetts in respect to education securing for them an extensive patronage.

Denominational and Parochial Schools.—Of schools of this class, a comparatively small number is reported, the intellectual instruction usually given in such schools being furnished by the many non-sectarian or public schools of the state.

Superior Instruction. — The institutions in the state for supplying a higher education are numerous and of high reputation. Special mention is made of the most important of these institutions in other parts of this volume. Their names are given below:

NAME	Location	When founded	Religious denomination
Amherst College.....	Amherst	1821	Cong.
Boston College.......	Boston	1864	R. C.
Boston University...	"	1873	M. Epis.
Coll. of the Holy Cross	Worcester	1843	R. C.
Harvard College......	Cambridge	1638	Non-sect.
Tufts College.........	Medford	1854	Univers.
Williams College.....	Williamstown	1793	Cong.

The principal institutions for the superior instruction of females are Abbott Academy, Andover; Bradford Academy, Bradford; Gannett Institute, Boston; Mt. Holyoke Female Seminary, South Hadley; Oread Institute, Worcester; Smith College, Northampton; Wheaton Female Seminary, and Wellesley College, Wellesley.

Professional and Scientific Instruction.—This includes principally institutions for the study of science, law, medicine, and theology. Many of the colleges just enumerated under the head of superior instruction have departments or courses in which the subjects classed as professional or scientific may be pursued, but there are in addition the following:

NAME	Location	When founded	Religious denomination
Andover Theol. Seminary	Andover	1808	Cong.
Epis. Theol. School......	Cambridge	1867	Episcopal
Mass. Agricult. College..	Amherst	1867	Non-sect.
Mass Inst. of Technology	Boston	1861	Non-sect.
Newton Theol. Institute.	Newton Cen.	1825	Baptist
New Church Theo. School.	Waltham	1866	N. J. Ch.

Special Instruction.—The Clarke Institution for Deaf-Mutes was established at Northampton in 1867. Pupils are instructed in the ordinary branches of an English education, besides philosophy, zoölogy, chemistry, and drawing. There is attached to the institution, also, a cabinet shop in which many of the pupils work a part of each day. Though founded by private benefaction, it receives an annual appropriation from the state, the amount from the latter source being, in 1875, $11,415. The number of pupils during the year was 50; the number of instructors, 8. The Boston Day-School for Deaf-Mutes was founded in 1869. It is a city free school for both sexes, and is supported entirely by taxation. The number of pupils, in 1874—5, was 63; the number of instructors, 7. The Perkins Institution and Massachusetts Asylum for the Blind was established in 1829, Samuel G. Howe being its first superintendent. (See Howe, S. G.) The total number of pupils admitted into it since its foundation was, in 1874—5, 865. All blind children who are residents of the state, who are suitable subjects for instruction, and who are recommended by the governor, are received for education. The ordinary branches taught in the common schools of the state form the course of study; to which is added instruction in music and in some branch of manual labor. In addition to the original donation made by its founder, it receives from the state an annual grant of $30,000. Besides the residents of the state who are educated gratuitously, it receives pupils from other states, upon payment of a certain annual sum. The number of instructors and employés was 55; the number of pupils, 156. There is also a school for idiotic and feeble-minded youth in Boston, founded in 1848, the number of instructors and employés in which, in 1874—5, was 16, of pupils 118; a private institution for the same purpose, founded in Barre in 1848, with 50 instructors etc., and 75 pupils; and one for backward and peculiar children, in Fayville, with 7 instructors and 8 pupils. There are nine industrial and reform schools in different parts of the state for the reformation of children, principally those between the ages of 7 and 17 years, who have been committed for poverty, truancy, vagrancy, and petty crimes.

MASTER OF ARTS. See Degrees.

MASTERY METHOD. See Latin Language.

MATHEMATICS.—The term *mathematics* is the Latin word *mathematica*, or the Greek word *μαθηματικά*, anglicized. The Greek word was derived from *μανθάνω*, *to learn*; whence *μάθησις*, *learning*. Both the Greeks and the Romans used the word *mathematica* as we do the word *mathematics*. The use of the plural form indicates that this department of human knowledge was formerly considered not as a single branch, but as a group of several branches, much as we use the phrase *the mathematical sciences*. This group of sciences is subdivided into *pure mathematics* and *mixed*, or *applied, mathematics*. In this article we are concerned mainly with the former.—The *branches of pure mathematics* are *arithmetic*, *algebra*, the *calculus*, and *geometry*. In this classification, the *calculus* is made to include the *infinitesimal calculus*, the *calculus of finite differences*, and the *calculus of variations*; while *geometry* includes the *common* or *special geometry*, *general* (*analytic*) *geometry*, *descriptive geometry*, *trigonometry*, *conic sections*, and the new science of *quaternions*.—No attempt to give a philosophical definition of the department of knowledge embraced under the term *mathematics*, has as yet been so successful as to be generally accepted. The statement that "mathematics is the science of quantity" is often flippantly repeated as a definition, but it can scarcely serve for that purpose. Comte defines mathematical science, as the science which has for "its object the *indirect* measurement of magnitudes, and constantly proposes *to determine certain magnitudes from others, by means of the precise relations existing between them.*" It is not a little singular that, while this great thinker rules geometry out of the realm of pure mathematics, he bases his definition of the science exclusively on the geometrical conception. That he does so is especially apparent in the discussion from which he deduces the definition. Moreover, it is not clear how the abstract principles of the science can be included in this definition. Such propositions as, "The product of the multiplicand and the multiplier is equal to the sum of the products of the parts of the multiplicand into the multiplier;" "The root of the product of several quantities equals the product of their like roots;" "The bisector of any angle of a triangle divides the opposite side into segments which are proportional to the adjacent sides;" etc., are scarcely embraced in Comte's definition without an unjustifiable extension of the signification of its terms. We propose the following definition: *Pure mathematics* is a general term applied to several branches of science which have for their object the investigation of the properties and relations of quantity—comprehending number, and magnitude as the result of extension—and of form. It will be observed that this definition embraces that of Comte, inasmuch as the measurement of quantities, or the determination of unknown from known quantities, is effected by an investigation of their relations; but, on the other hand, we can scarcely say that all investigations of the relations of quantities are for the purposes of measurement, or of determining unknown quantities from known.—But the chief purpose of this article is to inquire as to the place which mathematical studies should occupy in our courses of elementary instruction. In such an inquiry, the leading considerations are, (I) For what purpose should these studies be pursued in such courses? (II) To what extent should they be pursued? and (III) What general principles should govern our methods of teaching?

I. Mathematical studies should be pursued in elementary schools primarily as a means of mental discipline. Notwithstanding all that Sir William Hamilton has said, and the formidable array of names which he adduces in support of his views, it may still be claimed that there is no single line of study pursued in schools, which develops the mind in so many ways, and is so well adapted to every stage of mental growth, as mathematical studies. It has been asserted, and quite generally conceded, that the power of observation is not developed by mathematical studies; while the truth is, that, from the most elementary mathematical notion which arises in the mind of a child to the farthest verge to which mathematical investigation has been pushed and applied, this power is in constant exercise. By observation, as here used, can only be meant the fixing of the attention upon objects (physical or mental) so as to note distinctive peculiarities—to recognize resemblances, differences, and other relations. Now, the first mental act of the child recognizing the distinction between *one* and more than one, between *one* and *two*, *two* and *three*, etc., is exactly this. So, again, the first geometrical notions are as pure an exercise of this power as can be given. To know a straight line, to distinguish it from a curve; to recognize a triangle and distinguish the several forms — what are these, and all perceptions of form, but a series of observations? Nor is it alone in securing these fundamental conceptions of number and form that observation plays so important a part. The very genius of the common geometry as a method of reasoning—a system of investigation —is, that it is but a series of observations. The figure being before the eye in actual representation, or before the mind in conception, is so closely scrutinized, that all its distinctive features are perceived; auxiliary lines are drawn (the imagination leading in this), and a new series of inspections is made; and thus, by means of direct, simple observations, the investigation proceeds. So characteristic of the common geometry is this method of investigation, that Comte, perhaps the ablest of all writers upon the philosophy of mathematics, is disposed to class geometry, as to its methods, with the natural sciences, as being based upon observation. Moreover, when we consider applied mathematics, we need only to notice that the exercise of this faculty is so essential, that the basis of all such reasoning, the very materials with which we build, have received the name *observations*. Thus we might proceed to consider the whole range of the human faculties, and find for most of them ample scope for exercise in mathematical studies. Certainly, the *memory* will not be found to be neglected. The very first steps in number, — counting, the multiplication table, etc., make heavy demands on this power; while the higher branches require the memorizing of formulas which are simply appalling to the uninitiated. So the *imagination*, the creative faculty of the mind, has constant exercise in all original mathematical investigation, from the solution of the simplest problem to the discovery of the most recondite principle; for it is not by sure, consecutive steps, as many suppose, that we advance from the known to the unknown. The imagination, not the logical faculty, leads in this advance. In fact, practical observation is often in advance of logical exposition. Thus, in the discovery of truth, the imagination habitually presents hypotheses, and observation supplies facts, which it may require ages for the tardy reason to connect logically with the known. Of this truth, mathematics, as well as all other sciences, affords abundant illustrations. So remarkably true is this, that to-day it is seriously questioned by the majority of thinkers, whether the sublimest branch of mathematics — the *infinitesimal calculus* — has any thing more than an empirical foundation, mathematicians themselves not being agreed as to its logical basis.—That the imagination, and not the logical faculty, leads in all original investigation, no one who has ever succeeded in producing an original demonstration of one of the simpler propositions of geometry, can have any doubt. Nor are *induction*, *analogy*, the *scrutinizing of premises* or the *search* for them, or the *balancing of probabilities*, spheres of mental operation foreign to mathematics. No one, indeed, can claim a pre-eminence for mathematical studies in all these departments of intellectual culture, but it may, perhaps, be claimed that scarcely any department of science affords discipline to so great a number of faculties, and that none presents so complete a gradation in its exercise of these faculties, from the first principles of the science to the farthest extent of its application, as mathematics. There are, however, two respects in which, probably, special pre-eminence may be claimed for mathematics as a disciplinary study; namely, training the mind to the habit of forming clear and definite conceptions, and, of clothing these conceptions in exact and perspicuous language. This pre-eminence arises, in part, from the fact that, in this branch of knowledge, the terms convey exactly the same meaning to all minds. Thus, there can be no difference between the conceptions which different persons have of *fire*, *air*, a *straight line*, a *circle*, a *perpendicular*, a *product*, a *square root;* or of the statements, that 3 *and* 5 *make* 8, that *the sum of the angles of a plane triangle is two right angles*, etc. The conception in each case is definite, and the language may be perfectly clear. That this is not so in most other sciences, no one needs to be told. Can we be sure that all have the same conception of the metaphysical terms *idea*, *perception*, *reason?* Can any one discriminate infallibly between an *adjective* and an *adverb;* between *downy*, *hirsute*, and *pubescent?* Are the conceptions designed to be conveyed by the terms *schistose*, *fissile*, *slaty*, *laminar*, *foliated*, *squamose*, so distinct that no two mineralogists will ever interchange them? Is the meaning of a Greek text always unequivocal? Is it an easy matter for any two persons to get exactly the same conception of the causes which led to a certain political revolution; can either be absolutely certain, from any language which he can use, that no one will mistake his conception? — That the habit of mind which rests satisfied only with clear and definite conceptions, and the power of speech which is able to clothe such conceptions in language perfectly unmistakable, are most important attainments, need not be argued; and these are exactly the ends which mathematical studies, properly pursued, are adapted to secure. In this hasty review, nothing has been said directly of these studies as a means of developing the *reasoning faculties*, since it is generally conceded that pure mathematics is practical logic, and that pupils, who do not learn to reason by their study of mathematics, fail of the most important end of such study.

Doubtless, the common answer to the question, Why should mathematical studies be pursued in schools? would be, *for their practical value;* by which is meant, their direct application to the affairs of life, as in reckoning bills, computing interest, measuring distances, volumes, areas, etc. It is, indeed, true, that, in the every-day affairs of life, to the accountant, and to the man of business, a certain amount of arithmetical knowledge is essential — that surveying, civil engineering, mechanics, navigation, geography, and astronomy, are based on geometry. But, let it be observed, that only a special few practice the arts last named, and that for the masses embraced in the former specifications, a very limited amount of arithmetical knowledge is all that they are required to apply. And still further, while it is, indeed, necessary that the business man should be able to add, subtract, multiply, divide, and compute interest, skill in these operations can never form the basis of practical success in life, except in the case of mere clerks. Many of the most sagacious business men would make wretched work with their ledger columns, and they know too well their own deficiencies to risk themselves in any important numerical computations. Indeed, the elements of practical success in life are quite other than a specific knowledge of any branch of science whatever, however indispensable a certain amount of such knowledge may be in particular callings. The conclusion, therefore, is, that the important point is not, how much mathematical knowledge can be crammed into the minds of pupils, but by what methods of teaching and study such habits of mind can be secured, as will make the pupils most efficient in performing the duties of life.

II. *To what extent should mathematical studies be pursued in our elementary courses?*— Were we to judge from the practice of most schools, we should conclude that mathematical studies ought to occupy from one-third to one-half of the pupil's time throughout his school life, unless, indeed, a slight exception is to be made in favor of other studies for the last two years of a college course; that is, that reading, spelling, writing, geography, grammar, history, literature, rhetoric, logic, the whole domain of natural science, including the physical constitution of the human system, chemistry, languages, metaphysics, political economy, — all these, and whatever else goes to make up the furniture, and secure the discipline, of a well-cultivated mind, are only to receive as great, or at most twice as great, a part of the pupil's time, as his mathematical studies. And this is no exaggeration, as will be obvious from an inspection of the curriculum of a graded school, or college. For the first six or seven years of the ordinary graded public school course, if we include the oral lessons, in *number* and *form*, of the lowest grade, arithmetic forms one of the three main studies for the entire course; and, in not a few cases, there are two arithmetical exercises, one in mental (oral), and one in written arithmetic, or one in arithmetic and another in algebra, each day, constituting, in such cases, fully one-half of the school work. During the entire course of the high or preparatory school, either algebra, higher arithmetic, or geometry constitutes one of the studies, except for a part of one year; but this exception is much more than made up by the large relative amount of time which the pupil's mathematical studies usually occupy, and by the fact that not unfrequently some two of these studies are pursued at the same time. In the college course, one of the three regular studies for the first two years is, almost invariably, mathematics. —So far, reference has been had exclusively to *pure mathematics*, including only arithmetic, algebra, geometry, and perhaps a little of general (analytical) geometry and the calculus. Whatever of applied mathematics, including surveying, navigation, mechanics, astronomy, etc., is to be studied, must find additional time in the course. The question then arises, can the legitimate purposes for which mathematical studies should be pursued, be secured in any less time? In order to answer this, let us observe the exact proportion of time usually given to the pure mathematics in a course of training extending through the ordinary college course. Arithmetic has from one-half to one-third of the pupil's time in the elementary schools. In the high-school or academic course, to obtain any creditable knowledge of algebra, geometry, and plane trigonometry, and to review the arithmetic, at least one-third of the time is consumed. Passing into the college with this knowledge of mathematics, the student finds one-third of the time, for the first two years, scarcely adequate to secure a respectable knowledge of higher algebra, geometry, and trigonometry, the elements of the general geometry, and the infinitesimal calculus; and whatever of applied mathematics is learned, as of surveying, mathematical drawing, mechanics, astronomy, etc., must find a place in the other two years of the college course. Now, all this is simply inevitable, unless relief can be found in the course prior to entrance upon college work. If, however, the inordinate demands of arithmetic can be so abridged (see ARITHMETIC), that the grammar school course shall include, at least, eighteen months' study introductory to algebra and geometry, the high school can save this time for other studies, and also secure such thoroughness in preparation, that the student's course in college will be far more rapid and satisfactory than at present. With the quality of preparation now secured, it should be borne in mind, that the student comes to college having, it is true, been over the requisite amount, but with so little of the real strength and knowledge which that course should impart, that, if he does justice to his mathematical studies for the first two years, nearer one-half than one-third of his time is consumed upon them. By rigidly confining the study of elementary arithmetic to its proper domain, giving a year in the grammar school to an introduction to algebra, and half a year to the definitions and facts of plane geometry, the pupil may come to the high school so thoroughly prepared in the elements of the three great mathematical studies,—arithmetic, algebra, and geometry, that between two and three years in the high school will be amply sufficient to secure such further proficiency in these branches as is consistent with the course here marked out. Moreover, if the pupil's school life closes with the grammar school, the course thus secured will be of far more value to him in after life, both for practical uses and as a discipline, than the ordinary one. (See Arithmetic, Algebra, and Geometry.)—In the above, it will be observed, that the general geometry and the infinitesimal calculus are included in the college course. The elements of the former are usually required, although it is quite common (for no good reason) to make the latter elective. By omitting the calculus, the graduate leaves college without ever having looked into one of the sublimest departments of human knowledge, or having even the remotest idea of the language and methods of the mechanics and astronomy of the day, or being able to read an advanced treatise upon any scientific subject as treated by the modern mathematician. Nor can the beauty and power of the general geometry be appreciated without a knowledge of the calculus. Thus the pupil who is allowed, at his option, to leave this out of his course, leaves college a hundred years behind his time, in one of the leading departments of human knowledge.

III. *What general principles should govern our methods of teaching mathematics?*—This topic has been quite fully treated in the separate articles Arithmetic, Algebra, and Geometry, to which reference is made. It is proper to add here, that, from first to last, the methods should be such as will give absolutely clear perceptions and conceptions, and secure facility, accuracy, and elegance in expression. These ends are of vastly more practical importance than the mere ability "to get the answer" of special problems. The notion which prevails among some teachers, that if the pupil learns the process, and becomes expert in it, he has obtained every thing that is essential, and that, whatever of the *rationale* may be desirable will be, in some way, induced by this mechanical process, is an exceedingly vicious one. In the first place, it is far more important that the pupil should be able to comprehend the logic, and to express his ideas in intelligible language than merely to solve any number of problems, since the former ability he will have occasion to use every day of his life, while he may never need the latter at all. But we are not driven to the alternative of securing culture at the expense of mechanical skill; the very best means to acquire expertness in mathematical manipulations is that which secures the best results in culture. No greater intellectual monstrosity probably ever presents itself than he who is usually known as a mathematical genius; that is, one who has a wonderful ability to do what nobody else can do, or cares to do—to solve knotty and often senseless mathematical problems. On the contrary, the object of mathematical study should be to develop men with cultured minds, not to make them mere computing machines.

Mathematical Literature.—It is designed, under this topic, to point out to the teacher a few treatises which may be helpful to him in extending his knowledge of the subjects of arithmetic, algebra, and geometry beyond the mere rudiments; in becoming acquainted with the history of these branches; and in providing material for use in class-room work. It is rather to mention a few works which are presumed to be accessible to the teacher than to furnish an extended list of authors. The best catalogues of writers on algebra and geometry accessible to teachers are those in the *Encyclopædia Britannica*. The list of writers on algebra contains 171 names, and extends from 360 A. D. into the present century. The catalogue of geometrical writers covers the period from 272 A. D. to the middle of the present century.—By far the most complete history of arithmetic with which we are acquainted is the article by Dr. Peacock in the *Encyclopædia Metropolitana* (vol. I. of *Pure Science*, pp. 369—482). The *Encyclopædia Britannica* also contains a fair history of this branch, together with as good an outline of the history of algebra and geometry as the teacher can usually find accessible. The ***Algebra*** of Wallis, an English mathematician (1616—1703), has a history of the subject prefixed.—Of *Mathematical Dictionaries*, mention may be made of those by Hutton (London, 1815); Barlow (London, 1814); and Davies and Peck (N. Y., 1856).—Montucla's *History of Mathematics* (4 vols., 4to), besides being too voluminous for most readers, is brought down only to the beginning of the present century, and is only to be had in Latin or French. A more recent work is *Geschichte der Mathematik*, by Poppe (Tübingen, 1828), to be had only in German. Among other works in the German language, especial reference should be made to Diesterweg's *Wegweiser* (Essen, 1851). This may be called a treatise on the *Theory and Practice of Teaching*, discussing not only the philosophical principles of pedagogy, but treating, quite in detail, methods and even textbooks. In the second volume (pp. 343—394), may be found a full list of German text-books on arithmetic, in connection with the discussion of methods. The succeeding chapter treats in like manner of geometry.—Among arithmetics not now specially candidates for popular favor, the following will be found interesting and valuable in a teacher's library: *An Introduction to Arithmetic* on the Lancasterian plan, by John Ruton (Albany, 1817); Dana P. Colburn's *Arithmetic* will be found exceedingly suggestive to the practical teacher; Winslow's *Computist's Manual* contains a large amount of practical matter very useful to the teacher; Chase's *Arithmetic* furnishes a vast amount of material which can be utilized by the teacher in the recitation room; Sangster's *Arithmetic* (Montreal, 1864) will be found quite instructive in many respects. To these the intelligent teacher will add the various series offered to the public by leading educators in the United States.—In algebra, among English works, Todhunter's *Algebra*, and *Theory of Equations;* Bland's *Examples;* Wood's, Young's, Hind's, and Bonnycastle's treatises on algebra will afford not only the elements of the subject, but an exhaustless mine of examples for practice. Peacock's *Algebra* (2 vols., 8vo, London) is one of the most celebrated theoretical treatises. Serret's is one of the best French treatises. Cirode's and Comberousse's are also valuable. Hackley's *Algebra* (N. Y., 1849) will be found valuable for reference, being one of the most complete ever published in this country. In reference to geometry, it may be suggested that every teacher should read President Hill's two little books, *First Lessons in Geometry*, and *Second Book*. Most English writers on the elements of geometry have contented themselves with editing Euclid with slight modifications. The student who wishes a knowledge of the modern methods in elementary geometry, will find Mulcahy's work quite satisfactory. *Rouché et Comberousse*, a French treatise (2 vols., 8vo), is the most complete modern treatise on elementary geometry with which we are acquainted, and is a complete *thesaurus* of examples for independent work. All of De Morgan's (English) mathematical works are exceedingly valuable, containing treatises on algebra, geometry, the calculus, and other branches. In regard to the relative value of mathematical studies, see Sir William Hamilton, *Discussions on Philosophy and Literature* (N. Y., 1858), art. *On the Study of Mathematics as an Exercise of Mind;* J. S. Mill, *Examinations of Sir William Hamilton's Philosophy* (1865); Grote, *Review* of this work (1868); Barnard's *Journal of Education*, vol. XIII.; Whewell, *On the Principles of English University Education* (Lond., 1838); T. H. Safford, *Modern Mathematics in the College Course*, in *Proceedings of National Educational Association*, at St. Louis, 1871; T. Hill, *True Order of Studies* (N. Y., 1876); Todhunter, *The Conflict of Studies* (Lond., 1873).

MATRICULATE (Lat. *matricula*, a public roll or register), to admit to membership in a college or university, by enrollment. (See College, and University.)

MEDICAL SCHOOLS. The earliest propagation of medical science was effected by means of tradition, and not until much later by written records. The oldest instructors were the priests in the temples of Æsculapius. Hippocrates, among the Greeks, Galen, among the Romans, and Avicenna, among the Arabs, were the first *savants* that brought into scientific shape the written fragments left by their predecessors. The study of their works was the main source of medical knowledge for centuries. The ancients had no special medical schools, but their schools gave scientific and philosophical instruction in general. Such institutions could be found in Athens, Alexandria, Rome, and other cities. The name *medical school* was first used in the 9th century in the city of Salerno, where an association of several medical teachers, of the Greek, Jewish, Latin, and Arabian nations, lectured on the healing art. Their method, substantially, consisted in the reading and explanation of the old Greek, Roman, and Arabian parchment scrolls. After the foundation of universities, in the 13th century, the medical schools, as a rule, were united with them. (See University.) The earliest were those of Naples and Messina, founded in 1224, by the emperor Frederick II. of Germany. The division into faculties was first made in Paris, Prague, and Vienna. Highly celebrated medical schools of the early middle ages were, together with those above named, at Leipsic, Basel, Montpellier, Bologna, Padua, Pavia, and Salamanca; at the last named of which, the Jews and Arabs taught mathematics and medicine. In all these institutions, the writings of the ancient physicians named above formed the basis of teaching; and only with the development of anatomy, did the scientific efforts attain a higher degree of perfection. In 1308, the Great Council of Venice provided, by a special decree, that the medical profession of the city should, once a year, make the dissection of a human body; and, about 1320, the first work on anatomy, based on his own dissections, was written by Mondini di Luzzi. It was first printed in Padua, 1478, and for a long time was held in the highest esteem. Still, the dissection of human bodies remained a very rare occurrence, a special permission of the pope having to be obtained in each case. The real father of anatomy was Andreas Vesalius, professor in Basel; where his celebrated work, *De humani corporis fabrica*, was edited in 1403. Surgery, the child of anatomy, remained, for a long time, in the hands of empirics; and it was not until the 17th or 18th century, that it was taught scientifically, in universities. The cultivation and development of anatomy also changed the method of teaching, in the medical schools, from a simple lecturing to a more demonstrative course; and, with the accumulation of material for teaching, it was natural that medical science should be more and more divided into specialties, for which separate instructors were appointed. The first stationary clinics were organized at Leyden, by Boerhaave, in the first half of the 18th century, and at Vienna, by his pupil Van Swieten.

These two, together with Van Haën and Johann Peter Frank, were the founders of the practical method of medical instruction. Previous to them, the professors, of surgery for instance, lectured before their audience for years, without even touching a patient with the knife. This to us, nowadays, seems hardly comprehensible. The first clinic of obstetrics was established in 1720, in Paris, by Grégoire. A very celebrated school of midwifery was founded, about 1730, at Strasbourg, and first conducted by the renowned Johann Jacob Fried. Separate clinics for other specialties, as ophthalmology, otology, skin and venereal diseases, etc., are of more recent date.

In Germany, every medical school constitutes a faculty of a university; this is also the rule in the other European countries, England excepted. Considering the degree of preparatory instruction, Germany ranks highest. The students, after having gone successfully through the gymnasium, receive a certificate of maturity, that enables them to matriculate in the medical faculty of any of the German universities of the German Empire, Austria, and Switzerland. No time is fixed for the duration of the course of studies; but, generally, it takes five years. At the end of the first or second year, the student has to undergo an examination in natural philosophy; and, at the end of the whole term, a rigid examination (*rigorosum*), theoretical as well as practical, takes place for the degree of M. D. Besides this, the several states require what is called a *Staatsexamen* (state examination) before granting a license for practice. In all the German universities, the students have absolute freedom to select such lectures, and to follow them in such order, as they please. Very nearly the same are the arrangements in the universities of Austria, Switzerland, Denmark, Norway, Sweden, Russia, the Netherlands, and Belgium. — France has only three medical faculties (Paris, Montpellier, and Nancy) and 21 so-called *écoles préparatoires*. At the former, the *docteurs en médecine et chirurgie* are educated; the latter train an inferior class of physicians (*officiers de santé*), licensed for practice only in certain departments. In France, no freedom of instruction exists. The lectures and their order are strictly prescribed. The time of study is fixed at 3 years for the *officiers de santé*, and at 4 years for the degree of M. D.—England has preserved the old independent institutions of the middle ages. The state has no influence upon the education of medical students; and only a weak control is exercised by the General Medical Council of London—the highest medical authority of Great Britain. This body appoints the corporations that have the right to educate and license physicians. All medical schools are private institutions maintained by private means. Twenty-three so-called "licensing bodies" (7 in England, 11 in Scotland, 5 in Ireland) bestow the privilege of practicing the art, the qualifications for which may be obtained at 45 medical schools. Of these, 27 are in England (11 in London alone), 8 in Scotland, and 10 in Ireland. The licensing bodies require 4 years' study, and a certificate showing the scientific acquirements of the applicant to be sufficient for the study of medicine. The different degrees that may be obtained at the English universities are Bachelor of Medicine (M. B.), Bachelor of Surgery (B. S.), Master in Surgery (M. S.), and Doctor of Medicine (M. D.). Similar to the English medical schools are those of India and Australia.—In Italy, 17 universities are maintained by the state, and 5 by municipal and provincial corporations. Perfect freedom of instruction is allowed, the only control exercised over the students consisting in 6 several examinations in the different branches of medical science; after passing which the license is granted. For the *diploma laurea di dottore in medicina e chirurgia*, a separate examination is required.—Turkey has a medical school in Constantinople, divided into a military and a civil department, and organized after the French model. The same is the case with the medical academy in Cairo, Egypt, established by Mehemet Ali, in 1827.

Medical Education in America. — For more than a century after the American colonies had been planted, they did not contain an institution of medical learning. Medical instruction was alone conveyed in the irregular form of medical pupilage. A few physicians, in different parts of the country, eminent for their skill and popularity, attracted to themselves numerous pupils, who enjoyed the advantages of the library and the conversation of their preceptor, compounded his medicines, and occasionally attended him in his visits; these preceptors, after three or more years, signed certificates of attendance which supplied the place of diplomas. In some sections, a system of apprenticeship existed; the young medical pupil being indentured for a period of time, often as long as seven years. Those students who aspired to a regular degree in medicine, and the high public favor accorded to it, were obliged to cross the ocean and to attend one of the European universities, a step not unfrequently taken by those able to afford the great expense of such a course. In some of the larger towns, an occasional private course of lectures on anatomy, surgery, etc., was attempted with success; and these paved the way for the regular and orderly organization of medical colleges. The first medical faculty in the country was instituted in 1765, under the auspices of the College of Philadelphia, which was afterwards merged in the far-famed University of Pennsylvania. In 1767, a second school was founded in New York, as a department of King's (now Columbia) College, having six chairs, from which lectures were, from the outset, read upon anatomy, theory and practice of physic, surgery, chemistry and materia medica, and midwifery. These two faculties, the only ones established before the Revolution, were possessed of very meager means and appliances of instruction, but they placed their standard of requirements very high, much higher than it has since been, or is even now, held. The principal rules of the New York faculty were (1) a preliminary examination, in Latin and some branches of natural philosophy, was required of all matriculants who had not taken a degree in arts; (2) after three years' study and one complete course of lectures, the bachelor's degree was allowed; (3) after another year and a second full course, students 22 years of age were admitted to examination for the doctorate; and they were required to publish and publicly defend a thesis on some medical subject. The examinations were conducted after the pattern of the University of Edinburgh, the regnant medical school of that day. These schools were broken up by the Revolutionary war, in 1776, at which time they had graduated about 50 physicians. With the return of peace, these institutions were resuscitated; and other faculties were formed in different parts of the country, principally as departments of previously existing literary colleges or universities,—that of Harvard in 1782, Queen's in 1792, and Dartmouth in 1796. They did not at once enjoy the attendance of large classes, for the country was impoverished and distressed by the effects of a long war; and they exercised with caution and reserve their privilege of conferring medical degrees, so that, with the close of the 18th century, their graduates did not exceed 253 in number; and the honorary M.D. was but seldom granted. Among the eminent names allied to these pioneer movements are those of Morgan, Rush, Jones, Bard, Romayne, Hosack, Warren, and Nathan Smith. During the opening quarter of the present century, as national prosperity revived, and learning began to flourish and students to multiply, a great degree of energy marked the progress of medical education. In 1825, the number of schools had increased from four to sixteen, well distributed, geographically, in twelve states, principally the Northern and sea-board states. Three were south of the Potomac, and two west of the Alleghanies. They were, as a rule, affiliated with some previously existing college, but the practice of seeking private, independent charters had commenced; these charters were readily granted by the legislatures of the various states. The American medical college then began to take shape and direction, the same essentially that it retains at this day. Government, as a rule, withheld all support, endowment, or control; and what little protective legislation had previously been enacted was then, or soon after, repealed; practical anatomy was a felony by statute; the populace were still inimical to dissection, the last mob-rising being as late as 1820. Thrown upon their own resources, and recognizing the necessities of the land for practitioners, the colleges broke away from the line of European tradition, at once increasing the facilities and lowering the standard of medical education. The minimum of requirements was pretty uniformly adopted; preliminary qualifications were not demanded; the time of study was shortened; examinations became less difficult; the printed thesis and its public defense were remitted except on special occasions; and, about 1812, the primary degree of M. B. ceased, and all diplomas declined in appreciation. Identified with this formative period, are the names of Physick, Mott, Drake, Mussey, Caldwell, Godman, McDowell, Knight, and Childs. Unpromising as this system, or want of system, in medical education, seemed to the conservative and educated part of the profession, and despite protests, in great variety, made as early as 1827, against the degenerate tendencies of the now developed American plan, the status of instruction grew worse rather than better. Chartered colleges of an inferior grade, often-times short-lived, multiplied,—duplicated even in the same town; indeed, from 1825 to 1850, their number almost trebled. In some, inferior professors lectured to benches promiscuously filled, the regulations were lowered, the lecture-term was reduced to three months, and the attendance even then was not obligatory, and few candidates were rejected. It is even said that diplomas, with lithographed signatures, were sold. About this time (1850), largely through the instrumentality of the American Medical Association, the demand for reforms gradually made itself felt. No radical change of plan has been adopted or is immediately probable, but a progressive growth from within is manifest. Schools of the poorer quality are still unduly multiplied; there are now over 60 of all grades, about 30 others having been discontinued. The time of study, and the length of the lecture-term, are yet too short, although additional courses have been added which are for the most part optional, and the number of branches taught has been increased. The instructor is still also the examiner of the candidates for graduation, although some visiting *censors* have been appointed. The curriculum, nominally the same as 50 years ago, is vastly improved by the introduction of clinical teaching, by demonstrative methods and illustration that excite the admiration of critics from abroad, and in a few cases by the grading of classes. The superior appointments of the more modern schools facilitate the work of the student, and many of them have their buildings close to the hospitals. The study of anatomy by dissection is now as easy as formerly it was difficult. The American plan favors the production of a superior teaching corps. The success of a school is ordinarily in direct proportion to the merits of professors; the brightest and most progressive minds, therefore, are diligently sought out, and a fruitful emulation is excited among them to render their lectures at once practical and popular. From these and other considerations, the conclusion is inevitable—that the colleges of the United States are destined to advance, however defective their origin and place may be. In 1874, the number of instructors was 780; of pupils, over 7,000, of whom 2,000 were graduated as doctors in medicine; one student in ten had previously obtained a degree in arts or science. In the above enumeration and description, only the "regular" schools are included. In this century, these schools have graduated fully 75,000 candidates. In regard to the education of women as physicians, a favorable sentiment has been growing up, and some progress has been made, three good schools being in operation. In the medical faculties of South America and the British dominions, the scale of regulations is higher than in the U. S., both as to preliminary qualifications and the term of study. In Brazil, there are two departments of medicine; in Canada, there are six, some of them quite small and poorly sustained.

The subjoined table contains a list of the medical colleges and departments in the U. S.

Medical College or Department	Location	When organized	Years in course	Weeks in year
Med. Coll. of Alabama	Mobile, Ala.	1858	2	21
Med. C. of the Pacific	San Francisco, Cal.	1858	3	20
Univ. of California	San Francisco, Cal.	1864	1	40
Yale College	New Haven, Ct.	1812	3	34
Atlanta Med. Coll.	Atlanta, Ga.	1855	2	17
Univ. of Georgia	Augusta, Ga.	1831	..	..
Savannah Med. Coll.	Savannah, Ga.	1853	2	16
Northwestern Univ.	Chicago, Ill.	1859	3	39
Rush Med. Coll.	Chicago, Ill.	1844	3	20
Woman's Hosp. M. C.	Chicago, Ill.	1870	2	32
M. C. of Evansville	Evansville, Ind.	1847	1	23
Coll. of Physicians and Surgeons of Indiana	Indianapolis, Ind.	1874	2	16
Univ. of Indiana	Indianapolis, Ind.	1869	2	22
Univ. of Iowa	Iowa City, Iowa	1868	2	20
Coll. of Physicians and Surgeons	Keokuk, Iowa	1850	2	16
Ky. School of Medicine	Louisville, Ky	1852	2	20
Univ. of Ky	Lexington, Ky	1874	..	..
Central Univ.	Louisville, Ky	1874	1	30
Louisville Med. Coll.	Louisville, Ky	1869	2	24
Univ. of Louisville	Louisville, Ky	1837	2	20
Univ. of Louisiana	New Orleans, La.	1834	3	16
Med. School of Maine, Bowdoin Coll.	Brunswick, Me.	1820	3	16
Coll. of Physicians and Surg. of Baltimore	Baltimore, Md.	1872	..	22
Univ. of Maryland	Baltimore, Md.	1807	2	20
Washington Univ.	Baltimore, Md.	1832	2	36
Harvard Univ.	Boston, Mass.	1782	3	..
Univ. of Michigan	Ann Arbor, Mich.	1850	3	26
Detroit Med. Coll.	Detroit, Mich.	1868	3	40
Univ. of Missouri	Columbia, Mo.	1873	2	40
Kansas City Coll. of Phys. and Sur.	Kansas City, Mo.	1869	2	21
Mo. Med. Coll.	St. Louis, Mo.	1840	2	24
St. Louis Med. Coll.	St. Louis, Mo.	1841	3	22
Dartmouth College	Hanover, N. H.	1796	3	44
Union Univ.	Albany, N. Y.	1839	3	24
L. I. Coll. Hospital	Brooklyn, N. Y.	1860	1	36
Univ. of Buffalo	Buffalo, N. Y.	1847	3	20
Bellevue Hospit. M. C.	New York, N. Y.	1861	3	37
Coll. of Phys. and Sur.	New York, N. Y.	1807	3	32
Free M. C. for Women	New York, N. Y.	1871	3	26
Univ. of City of N. Y.	New York, N. Y.	1841	3	32
Women's Med. Coll. of the N. Y. Infirmary	New York, N. Y.	1864	3	35
Syracuse Univ.	Syracuse, N. Y.	1872	3	39
Cincinnati College of Medicine and Surg.	Cincinnati, Ohio	1851	3	40
Med. Coll. of Ohio	Cincinnati, Ohio	1819	3	20
Miami Med. Coll.	Cincinnati, Ohio	1852	3	21
Cleveland Med. Coll.	Cleveland, Ohio	1843	2	40
Univ. of Wooster	Cleveland, Ohio	1869	2	20
Starling M. C. and Hosp.	Columbus, Ohio	1847	2	22
Univ. of Willamette	Salem, Oregon	1867	3	..
Lincoln Univ.	Oxford, Pa.	1870	3	37
Jefferson Med. Coll.	Philadelphia, Pa.	1824	2	22
Univ. of Pennsylvania	Philadelphia, Pa.	1765	3	24
Women's M. C. of Pa.	Philadelphia, Pa.	1850	3	32
Med. Coll. of S. C.	Charleston, S. C.	1826	..	32
Univ. of S. C.	Columbia, S. C.	1868	..	36
Univ. of Nashville and Vanderbilt Univ.	Nashville, Tenn.	1850	..	20
Tex. Med. C. and Hosp.	Galveston, Tex.	1873	2	16
Univ. of Vt.	Burlington, Vt.	1809	2	16
Univ. of Va.	Charlottesville, Va.	1824	..	..
Med. Coll. of Va.	Richmond, Va.	1851	2	37
Georgetown Univ.	Washington, D. C.	1851	3	20
Howard Univ.	Washington, D. C.	1868	3	40
Columbia Univ.	Washington, D. C.	....	3	22

Dental Colleges.—In the United States, the first institution of this kind was the Baltimore College of Dental Surgery, which received its charter in 1839. In 1876, there were in the U. S. the following dental schools:

Dental School or Department	Location	When organized	Years in course	Weeks in year
New Orleans D. C.	New Orleans, La.	1867	2	17
Baltimore College of Dental Surgery	Baltimore, Md.	1840	2	23
Maryland Dental Coll.	Baltimore, Md.	1873	2	26
Boston Dental College	Boston, Mass.	1867	3	16
Dental School of Harvard University	Boston, Mass.	1868	2	20
Missouri Dental Coll.	St. Louis, Mo	1865	2	17
N.Y. Coll. of Dentistry	New York, N. Y.	1866	2	20
Ohio Coll. of Dent. Sur.	Cincinnati, Ohio	1845	2	22
Pa. Coll. of Dent. Sur.	Philadelphia, Pa.	1856	2	36
Phila. Dent. Coll.	Philadelphia, Pa.	1863	2	36
Amer. Dental College	Austin, Tex.	1873	2	12
Univ. of California	Oakland, Cal.	1873	..	..

Homœopathic Colleges.— The homœopathic system of medicine was first definitely propounded by Hahnemann (born in Meissen, Saxony, 1755; died in Paris, 1843). The first homœopathic college was founded at Allentown, Pa., by Dr. Wesselhoeft, but it no longer exists. In 1876, there were in the United States the following homœopathic colleges and departments:

Homœopathic College or Department	Location	When organized	Years in course	Weeks in year
Chicago Homœop. Coll.	Chicago, Ill.	1876	3	29
Hahnemann Med. Coll. and Hosp. of Chicago	Chicago, Ill.	1860	..	29
Iowa State University	Iowa City, Iowa	1876	3	30
Boston Univ.	Boston, Mass.	1873	3	36
Univ. of Michigan	Ann Arbor, Mich.	1874	3	36
Homœop. M. C. of Mo.	St. Louis, Mo.	1858	2	20
Missouri School of Midwifery	St. Louis, Mo.	1876	3	18
N. Y. Homœop. M. C.	New York, N. Y.	1860	3	24
N. Y. Med. Coll. and Hosp. for Women	New York, N. Y.	1863	3	28
Pulte Med. Coll.	Cincinnati, Ohio	1872	3	28
Homœop. Hosp. Coll.	Cleveland, Ohio	1849	2—3	21
Hahnemann Med. Coll of Philadelphia	Philadelphia, Pa.	1869	2—3	20

In Europe, there are chairs of homœopathy in the universities of Munich, Germany, and of Buda-Pesth, Hungary; also, a school of homœopathy in London, England.

MEIEROTTO, Johann Heinrich Ludwig, a German educator, born August 22., 1742; died September 24., 1800. He was appointed, in 1771, professor, and, in 1775, rector of the Joachimsthal Gymnasium, in Berlin; in which position he was eminently successful, being called the *King of Rectors*. While a member of the school council, he traveled through the provinces of Prussia, Silesia, and Posen, and displayed great talent in organizing common schools. Besides numerous works on various subjects, he wrote a Latin grammar constructed on a plan which bore some resemblance to the methods of Jacotot and Hamilton, and which attracted considerable attention at the time of its introduction, but soon fell into disuse.

MELANCHTHON, Philip, one of the church reformers of the 16th century, and one of Germany's greatest schoolmen and educators, was born at Bretten, a little town near Heidelberg, Feb. 16., 1497; died at Wittenberg, April 19., 1560. In recognition of the extraordinary influence which he exerted upon the schools of Germany in his own and the following centuries, he has been honored with the title of *Præceptor Germaniæ*. After the death of his father, in 1507, he was taken into the family of his grandmother, who was a sister of the celebrated Reuchlin, and lived at Pforzheim. Reuchlin, who frequently visited his sister, was delighted with the progress of young Melanchthon, gave him books, and, after the fashion of the times, changed his original name *Schwarzerd* into the Greek *Melanchthon*. At the age of only twelve years, Melanchthon was sent to the university of Heidelberg, which two years later, in 1511, gave him the baccalaureate degree, but, in 1512, by reason of his extreme youth, declined to confer upon him the degree of Master. While at Heidelberg, Melanchthon took charge of the studies of the two sons of Count Löwenstein, and sketched, probably for their use, the first outlines of a grammar of the Greek language. In 1512, he went to the university of Tübingen, where he was involved in the struggle between the old and the new era, and with the energy and ardor of youth strove to compass all branches of knowledge. In 1514, at the age of seventeen, he was made a Master, and at once began to lecture on Latin classics. His career as an author began about the same time; for, as early as 1516, he published an edition of Terence, and, in 1518, his Greek grammar, at the close of which he announced "that he intended, in conjunction with a number of his friends, to edit the works of Aristotle in the original". At the same time, he attended mathematical and medical lectures, and studied the science of law. In 1518, Frederick the Wise, Elector of Saxony, upon the recommendation of Reuchlin, appointed him professor of Greek in the university of Wittenberg. When he left Tübingen, Simler, his old teacher, said of him: "As many learned men as the university can boast of, they are, nevertheless, none of them, learned enough to form a suitable estimate of the learning of him who is about to leave us." Melanchthon entered Wittenberg Aug. 25., 1518, and remained there until the close of his life, laboring for 28 years in intimate connection with Luther. He lectured on the most diverse subjects, — the Old and the New Testaments, dogmatics, the Greek and Latin classics, ethics, logic, and physics. His fame spread throughout Europe; and the number of his hearers reached at times as high as two thousand, embracing not only Germans, but Frenchmen, Englishmen, Poles, Hungarians, Italians, and Greeks. Among the distinguished educators who were formed under his teaching, were Trotzendorf and Neander. He was often, and in various ways, appealed to for counsel in school matters. The people of Nuremberg having resolved to establish a gymnasium, invited Melanchthon to become its rector. He declined this invitation, lest he might seem to be ungrateful to the Elector; but consented to take a leading part in the inauguration of the gymnasium, which took place in 1526. At the third centennial celebration of this event, in 1826, a statue of Melanchthon was erected in front of the building. But the most important event of his life in connection with school matters, was his visitation, in 1527, of the churches and schools of Thuringia, undertaken by order of the Elector, John the Constant, and through the influence of Luther. In company with Myconius and Justus Thomas, he traveled over the whole country, and, in 1528, published his *Report*, or *Book of Visitation*, a work of great importance in the history of education in Germany. This book describes the beginnings, as yet crude, of a high-school system in that country, without organization, or well-regulated activity. Melanchthon was a prolific author of text-books, which were universally introduced, and were perpetuated through many editions. They comprise a Greek and a Latin grammar, two manuals of logic, one of rhetoric, one of ethics, and one of physics, all characterized by great clearness of expression. Under the title *Declamationes*, we have a collection of Melanchthon's orations, which contain a treasure of educational wisdom. The best edition of Melanchthon's numerous works is that of Bretschneider and Bindseil, in the *Corpus Reformatorum* (28 vols., 1834—60). His life has been written by Ledderhose (Heidelberg, 1847; translated into English by Krotel); Schmidt (1861); and many others.

MEMORIZING, committing to memory, or, as it is sometimes called, *learning by heart*, generally implies repetition or *rote-learning;* though it need not be without an understanding of what is memorized. The law of repetition has an important application in many processes of instruction that are addressed, wholly or in part, to the memory. The mere memorizing of words or sentences, in order to produce a show of knowledge is a great abuse. Children may, however, be required to commit to memory some statements which they do not perfectly understand, such complete understanding requiring a more mature degree of intellectual development. "No doubt", says Calderwood (*On Teaching*, Edin., 1874), "all children must commit to memory a good many things they do not rightly understand. Such storing of the memory belongs less or more to all study." This is the view also of Thring (*Education and School*, London, 1864): "There should be a clear perception how far it is wise to explain, and to proceed on the principle of making a boy thoroughly understand his lessons, and how far they should be looked on as a mere collecting of material and a matter of memory. It must be borne in mind that, with the young, memory is strong, and logical perception weak. All teaching should start on this undoubted fact. It sounds very fascinating to talk about understanding every thing, learning every thing thoroughly, and all those broad phrases, which plump down on a difficulty, and hide it. Put in practice, they are about on a par with exhorting a boy to mind he does not go into the water till he can swim." The method referred to in this citation is the other extreme from mechanical word memorizing, and while not as injurious, or as likely to be adopted, is equally unphilosophical. The extent to which memorizing is to be carried, and the branches of instruction to which it is to be applied, constitute important subjects for the exercise of the teacher's judgment and intelligence. (See Concert Teaching, Memory, and Rote-Teaching.)

MEMORY is often represented as a distinct faculty of the mind; but this may do harm in education. The mind is one, and has no separate faculties distinct from each other, the term *faculty* being used merely for the sake of convenience. It is important to turn away from this mode of conception, and to look at the phenomena as they arise in the mind. An object and a mind come into connection; what is the result? An impression is produced on the mind, or more correctly the mind forms an impression of the object. What becomes of this impression? A new object presents itself, and then the impression disappears before the new impression which the mind forms of the new object. Has the former impression disappeared altogether? No. We believe that, in some way or other, it still remains in the mind. If a similar object were to come before the mind, it would be conscious that it had formed an impression of it before, and the two impressions would blend into one. We have here, then, a peculiar power of the mind to retain what it has once had; and this power does not apply merely to perceptions or other intellectual acts, but to feelings and desires. A longing for an object has been aroused within us. The longing is displaced for a time by some other pressing passion. But the longing is still in the mind; and when the appropriate causes of excitation occur, the longing will come back, and, it may be, blend with the new longing which helps to awaken it, or repel the new longing which has aroused it by contrast. This then is the first feature of memory. The soul has the power of retaining feelings, volitions, perceptions, and thoughts. The question has been raised, can these feelings, volitions, and thoughts entirely and absolutely vanish from the mind? A categorical answer cannot, from the nature of the case, be given to this question; but, certain facts render it likely that the mind retains every thing, and that it is merely the power of resuscitation which is defective. Many circumstances which seem to have been entirely forgotten, are, under peculiar conditions, recalled to the memory. It is said that often, when persons have been drowning, they have seen, as in a rapid vision, their past life in multitudinous details which they had entirely forgotten. People, in diseases of the brain, have remembered languages, which they had learned in early days, but which they seemed to have lost completely. Facts like these point to the indestructibility of that which has once had a place in the soul.—But besides the power of retention, there is the other power of reproduction; and it is to this power that the educator has to direct his attention. What are the means of strengthening the reproductive power of the minds of children? We have to look at the conditions of its exercise; and, in this connection, we must consider the four following principles: (I) It is plain that the impression will be reproducible in proportion to the strength and vivacity with which it is first made. This strength depends partly on the natural capacity of the child, partly on whether the stimulus in the object is such as to produce a strong impression. The educational inferences from this statement are numerous. Thus it follows that wherever a real object can be presented to a child, it should be used in preference to any picture of it, and that a picture of it is better than a mere verbal description. Moreover, if more than one sense can be employed, so much the better. If any object is to be remembered, the child will remember more easily, if he can touch, smell, and taste it, as well as see it. This arises partly from the fact that these direct sensations produce strong impressions, but partly also from what we call our second principle of memory:—(II) Every means should be used to concentrate the attention on the object. If we wish to make a child remember an object, the object must be allowed to lie before the child's eye or mind for some time. In the perception of every object the process is somewhat as follows: the perception or sensation has first to displace the preceding perception or sensation. It then gathers strength and occupies for a time the whole mind. But, soon after, another object of perception or of thought presents itself; and the mind will occupy itself with this. This new perception will weaken, and finally expel, the other. Each perception is connected with two other perceptions or mental acts—with the one which it expels and the one by which it is expelled. Now, the power of reproducing the mental act depends not merely on the strength with which the act is executed at its central moment, but also on the strength of the connections which it may form with the antecedent and subsequent acts; and this strength depends partly on the time and attention with which they can be kept together in the mind; for, in every mental act, there are subsidiary simultaneous acts which scarcely reach the point of consciousness. For instance, when I examine a house, there is some slight perception of the intermediate space between me and the house, of the objects, such as trees, which may be in that space, and of the sky which is overhead. These pass from the one definite perception to the other, and in a latent state help to recall the one, when we get the other. The strength of the connection is increased, if there be a natural connection between the two mental acts, such as that of cause and effect, means and end, or if there be some points of resemblance between them, or some points of contrast. But, in all cases, time must be given to let these points of resemblance or contrast flow over, as it were, from the one to the other. The danger to which the educator is here exposed, is that of attempting to do too much and, therefore, doing what he does too hurriedly. He must be patient. He must try to intensify the impression by allowing the various senses to deal with it, and he can thus concentrate attention longer on it than he could otherwise do. And he must, as far as possible, bring only two objects or two ideas at a time before the pupil's mind. These should be held together for some time; and they should, if it is possible, be naturally connected. Of course, there are occasions in which this is neither possible nor advantageous. There are some occasions in which the teacher must pass over a good deal of matter in a short time. He does not wish his pupil to remember the whole, nor would it be good for the pupil to do so; but these cases should be limited to those of necessity. And a warning should be given against the danger of indulging too much in reading books which, awakening the interest strongly and thus disturbing the nervous system, do not demand of the reader an accurate recollection. This is specially true of novels. The frequent and rapid reading of these works, in which the reader has no stimulus and no occasion to remember the incidents accurately, fills the mind with a great number of vague memories. These memories render indistinct what ought to be distinct, for they abstract so much of the valuable power that the mind possesses for reproduction; and the habit of reading without caring to remember, is apt to transfer itself to the books and acts which ought to have the closest attention.—(III) There must be frequent repetition. An object or thought is reproducible easily, when it has been made to occupy a large space in the mind. The power of reproduction is limited by time, and the mind can only reproduce within certain limits in this respect. If, therefore, an object is to be reproduced, the faded impression must be renewed; and the renewal of the impression strengthens its hold. It is thus that a fact may become indelibly imprinted on the memory. The value of the repetition cannot be overestimated, but great care must be taken not to make it wearisome.—(IV) The power of reproduction greatly depends on the state of the health. That there is a very close connection between this power and the body, is proved most conclusively by the numerous instances collected by Dr. Abercrombie, in which abnormal states of the brain were accompanied by abnormal developments of memory. When, therefore, a child forgets, it must not be always attributed to carelessness. A child learns a word on Monday, and knows it with perfect accuracy; but when he comes, on Tuesday morning, to repeat it, he finds he cannot. In all probability, the impression was too weak to last a whole day, and to resist the many and more interesting ideas which have intervened; but the lesson is not lost. The original impression is there; the teacher patiently and pleasantly renews the impression; and the old blends with the new, and strengthens, until repetition fixes it in the mind forever. But it may be merely a temporary suspension of the child's power of reproduction, in consequence of illness; and there is no surer sign of latent disease than when a child, generally ready and quick, stumbles and forgets. Some physiologists go the length of affirming that, owing to the freshness of the nervous system, the exercise of the memory should be assigned to the morning; while other mental efforts, such as those of imagination, should be reserved for the evening. These four principles lead not only to the power of reproduction, but to the power of ready and accurate reproduction. In order that the memory may embrace a wide range of subjects, it is essential that the mind should devote itself to such a range of subjects. The power of reproducing a subject depends upon the frequency and strength with which it has come before the mind. It is, therefore, not quite correct to say, that a person has a good or a bad memory. Every one has many kinds of memory. If he has exercised his mind in words, he will remember words; if he has given much attention to numbers, he will remember numbers; if to any other class of ideas, he will remember such ideas. But, however great his practice in numbers may be, that practice will not enable him to remember words; and the converse is also true. The teacher must carefully exercise the pupil in each group of notions, if he expects him to remember them readily and accurately. Perhaps, one of the questions which deserve careful consideration in education is what ought to be forgotten. The human mind is limited in its range, and cannot reproduce every thing. Ought it to put into its store-house any thing that it cannot hope to reproduce? We think that it ought. Where the aim is to produce in the pupil a clear idea or notion, many particulars must be adduced which, studied attentively for a short time, will render the notion clear and distinct; but it is not necessary that the mind should retain all these particulars. This is the case, for instance, in geography. In order to form a correct notion of a country, many particulars must be carefully weighed; but, after the notion has been attained, the pupil will wisely drop a great deal of the knowledge which he has temporarily mastered, deeming it enough to know where he can get the knowledge when he wants it. Again, when the object is to inculcate a great principle of action, the same course may be pursued. If, for example, a teacher wishes to impress upon his pupils the true idea of toleration, he may choose many incidents in history to bring it home to their minds, and may go into the minutest details of these incidents in order to awaken interest; but he succeeds in his purpose, if he leaves a strong and accurate general impression, even though the pupil forgets most of the details which have been given him. The power of forgetfulness is one that can also be directed, as well as the power of reproduction. It is, indeed, true that the greater the effort to forget any thing, the more surely is it impressed on the memory; but this holds true mainly in those matters in which there is a strong personal element; and just as a man who sleeps in a room where a clock strikes can make up his mind not to take any notice of the striking of the clock in his sleep, so, in the impersonal matters of the intellect, we can make up our minds to let such and such facts fall into oblivion. Kant distinguished memory as the mechanical, the ingenious, and the judicious. The mechanical is employed when the only bond of connection is, that the two things are in the mind at the same time, the one immediately succeeding the other. This is what is called committing to memory, or learning by heart. Such kind of memory must be frequently used in early education. It is important for the teacher to note its character. It depends on simultaneity and succession, and any disturbance of these circumstances disturbs the memory. For instance, it would be very difficult for any one at first to repeat the Lord's Prayer backwards. He has learned it forwards; he has not learned it backwards. A boy learns *amo, I love.* He may not have mastered *I love, amo.* If you ask him the Latin word for *death*, he cannot tell you; but if you ask him the meaning of *mors*, he can tell you. The third method—that which Kant calls the judicious, is no doubt the best; since by it, things are remembered by means of their natural connection in thought. Thoughts can be grouped, and one of a group suggests the other. Phenomena stand in the relation of cause and effect. The cause will suggest the effect, or the effect the cause.—As an example of the second kind, may be mentioned *mnemonics;* which is an attempt to introduce an artificial connecting link. Two ideas are unconnected, but they may be linked by a third which is familiar to the mind. Thus a clock has no real connection with hope; but, having resolved to make a speech, I fix on three objects in the hall, with which I arbitrarily connect the three heads of my discourse. The first, for example, is a pillar in the hall, and with it I connect the idea of *faith*; this will be my first head, and, when I see the pillar, I shall know how to begin. *Hope* is my second and I have but to look at the clock to recall it to mind; and a third object in the room, in the same manner, will remind me that my third head is *charity*. Mnemonic systems may be divided into three classes: (1) those which connect the ideas with localities, such as the parts of a room, tablets divided into different compartments, etc.; (2) those in which the ideas are connected with letters or words; and (3) those in which an attempt is made to seize hold of some natural connection; for instance, *haïr, mourir, naître, plaire, rire, vivre*, are irregular French verbs, having no connection with each other; but the meanings may be so arranged as to be easily suggestive of each other; thus, *die* suggests *live, live* suggests *to be born, to be born* suggests *laugh, laugh* suggests *please*, and *please* suggests *hate*. Now, if two of these ideas be kept steadily in the mind together, they will remain united in the mind, and afterwards the one will suggest the other. None of these mnemonic systems are likely to be of much use to the teacher. They, indeed, often add to the task of memory; they are apt to create confusion, after a time, and they tend to displace intelligent memory. The only case in which some good may be got out of them is in connection with dates. There is no doubt that dates are far more difficult to remember than letters or words; and, therefore, a temperate use of letters or words for figures may be recommended.—One of the most noted systems employing letters is the old one of Grey's *Memoria Technica* (1730). The letters employed are as follows:

a	*e*	*i*	*o*	*u*	*au*	*oi*	*ei*	*ou*	*y*
1	2	3	4	5	6	7	8	9	0
b	*d*	*t*	*f*	*l*	*s*	*p*	*k*	*n*	*z*

Here *a* and *b* stand for 1; *e* and *d*, for 2; *i* and *t*, for 3; and so on.

These letters are assigned arbitrarily to the respective figures, and may very easily be remembered. The first five vowels in order naturally represent 1, 2, 3, 4, 5. The diphthong *au*, being composed of *a* (1) and *u* (5), stands for 6; *oi* for 7, being composed of *o* (4) and *i* (3); *ou* for 9, being composed of *o* (4) and *u* (5). The diphthong *ei* will easily be remembered for eight, being the initials of the word. In like manner with the consonants; where the initials can conveniently be retained, they are made use of to signify this number; as *t* for three, *f* for four, *s* for six, and *n* for nine. The rest are assigned without any particular reason, unless that possibly *p* may be more easily remembered for 7 or *septem*, *k* for 8 or ὀκτώ, *d* for 2 or *duo*, *b* for 1 as being the first consonant, and *l* for five, being the Roman letter for 50, than any others that could have been put in their places. A much more ingenious and more effective system, is that taught by F. Fauvel-Gouraud (*Phreno-Mnemotechny, or Art of Memory*, N. Y., 1845; with *Dictionary*, for a ready application of the system), which was a modification of Fainagle's *New Art of Memory* (London, 1812). In this, as in other systems, the underlying principle is the law of association of ideas; and, in order to facilitate this association, arbitrary facts and dates are translated into the expressions of ideas or thoughts. Numbers are transformed into words and sentences by the following arrangement of equivalents:

0	1	2	3	4	5	6	7	8	9
s	t	n	m	r	l	ch	k	f	p
z	d					g (soft)	g (hard)	v	b
	th					sh			
						j			

The vowel and the aspirate *h*, with the *quasi* vowels, *w* and *y*, are not represented; and hence, in forming a word for the mnemonic representation of a date or other number, any of these can be used. Thus the number 32 may be represented by *man, moon, many, human, woman*, etc. This feature of the system adds greatly to the facilities with which it may be applied. For example, suppose it is desired to fix in the memory in this way the date of the passage of the Red Sea by the Israelites (1491 B. C.); by a careful selection from among the numerous words and phrases that may be taken to represent this number, the phrase *watery bed* is taken, as having some connection in ideas with the historical fact referred to. Then Gouraud's association is expressed in the sentence, "At the *Passage of the Red Sea*, the armies of Pharaoh met their death in a *watery bed*"; and as long as this phrase is remembered, the date involved in it cannot be forgotten. The advantage of this system is, that it need not bring into association heterogeneous ideas. In the application of it, many other curious devices, such as *homophonic analogies* etc. are used. — Of a somewhat similar character is Dr. Alex. Mackay's *Facts and Dates* (Edinburgh, 1869). In this, as in Gouraud's system, every date is contained in a sentence which is appropriate to the event. Thus the sentence which gives the date of Hannibal's defeat at Zama is, "The formidable warrior is defeated."—The art of mnemonics is said by Cicero to have been invented by the Greek poet Simonides. It is described by Cicero, Quintilian, and Pliny. In more modern times, works on the subject have been written by Schenkel (1593), Bruno (1582), Mink (1648), Grey (1730), Aretin (1810), Fainagle (1812), improved by Aimée (Paris 1832), Bemowsky (1842), Otto (1843), Kothe (*System der Mnemonik*, Cassel, 1853), Pick (1866), Sayer (1867), Slater (*Sententiæ Chronologicæ*, edit. by Miss Sewell, 1868), Mackay (1869), Minola, Nemos (1875), and many others. A short history of *Mnemonics* is given in Pick's work.

MENNONITES, a denomination of Protestants, which originated at Zürich, Switzerland, in 1525. They spread to Southern Germany, and soon after to the Netherlands, where Menno Symons, a former Roman Catholic priest, joined them in 1535. From him they took their name, though he was not their founder, but only reorganized them. In common with the Friends, they practice non-resistance and abstinence from oaths; and, in common with the Baptists, they reject infant baptism, administering, however, baptism by pouring. In the Netherlands, in 1700, they numbered 150,000 members; but at present have only 20,000; and, in Germany and Switzerland, even less than that number. In southern Russia, whither they have gone from Germany as colonists, they form a population of more than 30,000. Their emigration to the United States began in 1683, and continued throughout the entire 18th century. At present their membership in the United States and Canada, is estimated at 60,000. They are all of German origin, and most of them still employ the German language. Nearly all of them are farmers, being favorably known for their honesty, industry, and other domestic virtues, but greatly behind the age in the matter of education. Their first attempt to found a high school took place in 1868, when the *Christliche Bildungsanstalt* (christian institution of learning), at Wadsworth, Medina Co., Ohio, was opened. It is an academy, having for its principal a theological teacher, Rev. C. J. Van der Smissen, but besides him only teachers of German and English grammar, music, and the elementary branches. The number of pupils, in 1876, was 27. Only one of the various divisions existing among the Mennonites of this country, supports this school, which is under the control of an "administrative committee," appointed by the general conference of the body. The other divisions of the Mennonites have no institutions of learning whatever. Even Sabbath schools exist only in a minority of the churches, and are of quite recent origin. In Europe also, little is done by the Mennonites for the education of the members of their order. They send their children to the public schools, but support a theological seminary of their own, founded at Amsterdam, in 1812, under the name *De Kweekschool der algemeene Doopsgezinde Societeit ter bevordering van de predikdienst*, *i. e.*, Seminary of the General Society of Baptists for the furtherance of the ministry. This seminary is under the control of 12 *curators*, who are appointed by the trustees of the general society. It has at present (1876) 3 professors and about 30 students. In Germany the Mennonites have an academy at Weierhof, Rhenish Bavaria, founded in 1868.

MERCER UNIVERSITY, at Macon, Ga., under the control of Baptists, was founded in 1837. It has a fine building, on grounds comprising about 10 acres, and is furnished with valuable philosophical and chemical apparatus. Its endowment amounts to $250,000. The libraries contain about 9,000 volumes. The cost of tuition is $60 per annum; but provision is made for the free tuition of the sons of ministers and of candidates for the ministry. The university comprises a college of liberal arts, with a classical course of four years, and a scientific course of three years; a department of theology (not yet separately organized); and a school of law. In 1874—5, there were 6 professors in the college, and 3 in the law school, and 150 students, of whom 7 were in the law school. The Mercer High School, at Penfield, Greene Co., and the Crawford High School, at Dalton, are connected with the university. The following named persons have been presidents of the institution: the Rev. Otis Smith, 1841—2; the Rev. Jno. L. Dagg, D. D., 1843—50; the Rev. N. M. Crawford, D. D., 1850—60; the Rev. H. H. Tucker, D. D., 1867—71; and the Rev. Archibald J. Battle, D. D., appointed in 1872.

MERCERSBURG COLLEGE, at Mercersburg, Pa., founded in 1865, is under the control of the Reformed Church in the United States. It succeeded Marshall College (founded in 1835), occupying its buildings and grounds. It is supported chiefly by tuition fees and contributions. It has an endowment of $18,000. The libraries contain about 3,000 volumes. The cost of tuition is $45 per annum. There is a preparatory, a collegiate, and a theological department. In 1875—6, there were 7 professors and 75 students, (23 preparatory, 39 collegiate, and 13 theological). The presidents have been the Rev. Dr. Thomas G. Apple, and the Rev. Dr. E. E. Higbee, the present incumbent (1876).

METHODISTS, the collective name of a number of Protestant denominations that have sprung from the peculiar religious character and influence of John Wesley, a Fellow of Oxford University, and ordained as a clergyman of the Church of England. As early as 1729, while a Fellow at Oxford, Wesley gathered about him a number of persons of like character, and spent much time in religious worship, in the study of the Bible, and in active benevolent labors among the poor. Their fellow students, either in derision or as a happy expression of their character, called them Methodists, a term which has been loosely employed not only to describe any who are extraordinarily zealous in religion, but as the recognized name of several denominations that can trace their origin, more or less directly, to the influence of John Wesley. The principal Methodist bodies in Great Britain are the Wesleyan Societies, organized in 1740; the Primitive Methodist Church, organized 1819; the Methodist New Connection Church; the United Methodist Free Churches; the Bible Christian Church, and the British Wesleyan Reform Union. There are also affiliated Methodist bodies in France, and in Australia; and large and flourishing missions in China, India, South Africa, and elsewhere, under the charge of British Methodists; and bodies of American Methodists, which promise soon independent and affiliated organizations. In America, the oldest is the Methodist Episcopal Church, from which sprung, in 1844, the Methodist Episcopal Church, South; the African Methodist Episcopal Church; the African Zion M. E. Church; and the Colored M. E. Church of America. There are also several smaller organizations, called The Methodist Church, Methodist Protestant Church, American Wesleyan Church, Free Methodist, and Evangelical Association. All these bodies are substantially identical in doctrine, all maintain a regular itineracy of the preachers; and, in fact, the M. E. Church, and M. E. Church, South, embrace by far the greater part of all the membership among the white population. The general summary of Methodists in the United States, in 1876, gave in round numbers 19,000 itinerant ministers and nearly 3,000,000 members, in Methodist Episcopal churches; and 1,500 itinerant ministers and 160,000 members, in non-episcopal Methodist churches. In the rest of the world, Methodists at the same time numbered about 5,000 itinerant ministers and 1,000,000 members. According to the U. S. census of 1870, the Methodists had 21,337 church edifices, 6,528,209 sittings, and church property (edifices and parsonages) worth $69,854,121; but they have rapidly increased since that time.

In *Great Britain*, the leading body of Methodists in England and Scotland is composed of the Wesleyan Societies under the control of the British Wesleyan Conference, which has also a branch in Ireland, and affiliated Conferences in the British colonies. As early as 1744, two schools, the Kingswood and the Woodhouse Grove, were established, which are still flourishing. Two theological institutions were established in 1838, which are largely attended, many of the ministers now receiving their education at these schools. They have also the Wesleyan Proprietary School at Sheffield, which is recognized as one of the colleges of the London University. What are called day schools or parish schools are established numerously in England, complying with the terms required, and sharing in governmental assistance. Also, to fit teachers for these schools, the Wesleyans have a large normal school at Westminster. They have also a college designed expressly for the education of those who are preparing to be foreign missionaries. By means of a Children's Fund and other collections, many needy students are aided while securing an education. The Irish Wesleyan Conference has two vigorous schools under its charge, — the Belfast College and the Conventional School at Dublin. There are various other branches of Methodists in Great Britain, all of which manifest an increasing interest in education. The Primitive Methodist Church has a theological institute at Sunderland; the Methodist New Connection Church, has one at Sheffield; the United Methodist Free Societies, at Manchester; and the Bible Christians, at Shebbear.

In *Canada*, there are but two Methodist bodies, the one called the Methodist Church of Canada and Eastern America; and the other, the M. E. Church of Canada. The former has a flourishing university at Cobourg, with colleges of arts, theology, law, and medicine; also the Mt. Allison Wesleyan College, at Sackville, N. B.; the Wesleyan Female College, at Hamilton; Homestead College; Theological College, at Montreal; Collegiate Institute, at Dundas; Manitoba Wesleyan Institute, and Ontario Ladies' College, at Whitby. These institutions have an aggregate property of about one million dollars. They are all under the care of a board of education. The Methodist Episcopal Church of Canada concentrates its educational interests at Belleville, where it has a flourishing institution called Albert College, which has university powers, and departments in arts, theology, law, and medicine. There is also connected with it a school for females, called Alexandra College.

In *Australia*, the Methodists have several flourishing academies and colleges.

In the *United States*, the Methodist Episcopal Church was not organized till 1784; but Methodist Societies were established in New York and Maryland as early as 1766. Rev. Thomas Coke, LL. D., one of the presidents of the first conference, was a graduate of Oxford University, and deeply interested in education. At this conference, a "Book Concern", which has since become one of the leading publishing houses in the country, was provided for; and it was ordered that its profits should be devoted to five purposes, one of which was the foundation and maintenance of a college particularly designed for the education of preachers. A collection for this purpose was also ordered to be taken in all the congregations. Thus, education was approved as a part of the legitimate work of the church at the time of its organization. The college thus established was opened in Abingdon, Md., in 1787, and called, after bishops Coke and Asbury, Cokesbury College, and was well attended till 1797, when the building was destroyed by fire, without insurance, causing a loss of about $50,000, a great calamity for the feeble church. Immediately collections were ordered in the societies, and the college was re-opened in Baltimore; but the new building was also soon consumed by fire. So disheartened was the Church by these losses that some hastily inferred that it was "not the business of Methodists to build colleges", and it was impracticable to resume the enterprise at once; and, for twenty years, all the educational work of the church was carried on in a few private schools in various parts of the country. These schools were somewhat numerous, and, in some instances, formally recognized by the Church; but, for the want of system and permanent foundations, the most of what they accomplished has not been recorded in history.—As a kind of substitute for theological schools, the general conference ordered that all who entered the regular ministry should pursue for four years a prescribed course of literary and theological study, and be examined annually in the same; and their promotion in the conference as well as their ordination was dependent on their passing the examinations. This custom, the course of study having been enlarged and improved from time to time, is still practiced; and all Methodist ministers pursue a uniform course of reading and study for the first four years of their ministry. This has greatly contributed to harmony of belief and theological culture. It has, indeed, been a great educating power, every young Methodist preacher being specially charged to spend from four to six hours in study daily.

In 1817, largely through the influence of Rev. Wilbur Fisk, D. D., of New England, an *alumnus* of Brown University, an academy was purchased by the Conference in New England, and opened as a conference seminary. Students of both sexes were admitted. The ensuing general conference approved the enterprise, and recommended all the annual conferences to follow the example. This has become the general practice. The greatest educational force of Methodists has appeared in these seminaries. There have been nearly a hundred of these conference seminaries founded, of which some have become extinct after doing a noble work, some have become female colleges, and some have grown into regular colleges; but more than fifty still remain in a flourishing condition on the old foundation. The buildings and funds of these seminaries are valued at more than $4,000,000; and they employ about 500 teachers, and are attended by about 25,000 students of both sexes. They have educated at least 300,000 pupils, mostly young men and young women from 16 to 25 years of age, many of whom have become preachers or teachers. Of late, the leading conference seminaries are making efforts to secure endowments in addition to commodious buildings. There are but few colleges or schools exclusively for women under the care of the M. E. Church. Perhaps ten such institutions may be regarded as permanently founded, and as the property of the Church. These, for the most part, have good buildings, but no considerable endowment fund, and some of them are partly private property.—The first regular college established by the Methodists in America, except the Cokesbury College mentioned above, which had an existence of only ten years, was the Wesleyan University, at Middletown, Ct., in 1831. This college has been remarkably successful in the character of its *alumni*, having graduated about 1,200 in 45 years, besides partially educating many more, a large portion of whom have entered the ministry. Other colleges soon sprung up imitating its example; and there were, in 1877, at least thirty institutions having university charters, about 20 of which were doing respectable college work. Four or five had also added to the literary college, schools of medicine, law, or theology. The Northwestern University, at Evanston, Ill., has associated with it a medical school in Chicago. The Boston University has a medical, a law, and a theological department. The Syracuse University, in Syracuse, N. Y., has a medical college; and a college of missionaries and a law school are a part of its plan. The buildings connected with all these colleges cost over $3,000,000; the endowments are about $4,000,000, and the number of college students, about 2,500. The number of professors is about 300; of volumes in the libraries, 200,000. Several of these colleges are open impartially to both sexes. The number of young women attending them and pursuing thorough college courses of study, is comparatively small; but the experiment has proved, in all respects, a success. Even the medical schools of the Boston and the Syracuse universities are open equally to both sexes, and are largely attended by both males and females.

The establishment of theological schools proper met with considerable active opposition in the Methodist Episcopal Church, some fearing that the teaching would tend to educate for the ministry, as a profession, young men who had not been called of the Holy Ghost to this office and work; others maintaining that, if a young man were well grounded in academic and college education, the theological training might be well enough obtained by the course of study and reading furnished for young ministers, and by actual professional work. But, in spite of these objections, principally through the persistent efforts of John Dempster, D. D., a Biblical Institute was opened in Concord, N. H., in 1847, which was originally attended by students who had not pursued a college course of study, Dr. Dempster's great object being a school exclusively theological for young ministers of whatever grade of scholarship. Subsequently, this school was removed to Boston, and its courses of study were greatly enlarged; it is now a department of the Boston University. In 1855, the Garrett Biblical Institute was opened in Evanston, Ill., founded on a bequest by a Mrs. Garrett, of Chicago. In 1867, the Drew Theological Seminary was opened in Madison, N. J. These three theological schools are now largely attended by college graduates; but they furnish, as yet, but a small portion of those who enter the conferences as regular preachers. From the beginning, it has been the practice to admit to the ministry promising young men, with but a limited school education; but the relative proportion of college graduates is rapidly increasing. Several of the colleges offer special instruction to candidates for the ministry.

In the *foreign missions* of the Methodist Episcopal Church, schools have been established according to the exigences of the place, some elementary, and some theological, and even medical. Martin Institute, at Frankfort on the Main, Germany, is a combination of a conference seminary with a theological school. There is also a flourishing India Theological School, at Bareilly, British India. Several schools are under the charge of the Woman's Foreign Missionary Society.

Considerable effort has been made through the Freedman's Aid Society to open and support schools for the freed colored people of the South. About twenty schools have been established, employing a hundred teachers, and educating many young colored people for teachers and preachers. In eight years, more than half a million of dollars was expended for this purpose. Most of these schools will, probably, grow into permanent and strong seminaries or colleges.

In 1869, a board of education of the Methodist Episcopal Church was chartered in the State of New York, by request of the General Conference, designed to hold and disburse funds for the whole Church, particularly to aid students for the ministry, and especially for missionary work; and also, to assist schools, if any funds are intrusted to it for that purpose. The board is designed to be as permanent as the Church itself, consisting of two bishops, four preachers, and six laymen, appointed in sections, for twelve years each, by the General Conference. In 1872, Rev. E. O. Haven, LL. D., was elected by the General Conference corresponding secretary; and, since that time, many students, mostly in colleges and theological schools, have annually received some assistance from the board or its auxiliary societies, in obtaining an education. The General Conference has also recommended the observance of the second Sunday in June as "Children's Day," and that collections be taken in the Sunday-schools on that day in behalf of the board of education. The beneficiaries of the board are all pledged to repay the money after completing their school education. They receive money as a loan, not by gift.

The General Conference of 1876 made a provision in regard to education, which was designed to render the action of the Church on that subject more systematic and radical than ever before. It makes it the duty of the presiding elder to bring the subject of education, in individual churches, before the first quarterly conference of each year, and secure the appointment of a committee, of which the preacher in charge shall be chairman; to organize, wherever practicable, a church lyceum for mental improvement; to organize free evening schools; to provide a library, text-books, and books of reference; to popularize religious literature by reading-rooms, or otherwise; to seek out suitable persons, and, if necessary, assist them to obtain an education, with a view to the ministry; and to do whatever shall seem best fitted to supply any deficiency in that which the church ought to offer to the varied nature of man. In this way, it is hoped to make educational work a part of the duty of every preacher and of every congregation.

While, in the aggregate, the educational work accomplished by the direct agency of the Methodist Episcopal Church appears creditable, it must be acknowledged that, hitherto, the efforts of the denomination have not been so systematic, and so thoroughly wrought out, on this subject, as in many of its other enterprises. Its numerous Sunday-schools are all carefully organized and reported, and the circulation of Sunday-school literature is immense. Through the influence of the Rev. J. H. Vincent, corresponding secretary of the S. S. Union, nearly every Sunday-school in the whole Church feels the power of a central life and controlling spirit. The seminaries and colleges have acted less in concert, and some conferences have done comparatively little for education; but, at last, a condition has been reached, in which every society is requested to have a committee on education; nearly every annual conference has an education society practically auxiliary to the board of education; every congregation is requested annually to contribute for education; and the seminaries, colleges, and theological schools are nearly all steadily receiving additions to their property; an increasing proportion of the ministers are graduates of colleges and theological schools; and the sentiment is strong in the Church that education will be far more thoroughly advanced in the second century of American Methodist history than in the first.

The Methodist Church is decidedly in favor of the public-school system, particularly of the elementary schools attended by children residing at home. Several times, the General Conference has expressed the sentiment of the Church against using the funds of the state to aid parochial or sectarian schools. It is, however, in favor of following the practice that has grown up among Americans, as a Christian people, of having the Bible read as a sacred book in the public schools; though some leading Methodists do not recommend even insisting upon that. This Church favors supplementing the work of the state by whatever may be deemed necessary to secure popular elementary education. It claims that, if the state does not provide for education, the Church should. Colleges and universities should not be trammeled by political partisanship or control. The Church is competent to establish and sustain colleges and universities in which the broadest and best culture shall be given in science, philosophy, and religion. Neither of these should be absent from a college or a university; but it is difficult to maintain them all in a college controlled by the state.—The literary institutions of every grade, under the care of the Church, are so numerous, and their condition is so constantly changing that, for an exact enumeration of these, attention is directed to the *Methodist Almanac* and other current publications of the Church.

When the Methodist Episcopal Church, in 1844, divided itself into two sections, that which became the Methodist Episcopal Church, South, retained all the schools of every grade within the boundary created by what was called the *Plan of Separation*. Among these schools, were several chartered colleges of high standing. Randolph Macon College had been established in 1832, one year after the Wesleyan University at Middletown, Ct., and is, therefore, next to the oldest Methodist College in America. Emory College, at Oxford, Ga., had been founded in 1837, and Emory and Henry College, at Emory, Va., in 1838. Between 1844 and the breaking out of the civil war, other institutions were added. Centenary College, which had been established by the state of Louisiana in 1825, passed, in 1845, into the hands of the Methodist Episcopal Church, South. Trinity College, in Randolph Co., N. C., arose (1852) from a school commenced by the Rev. B. Craven, D. D. Wofford College, S. C., named after the Rev. Benjamin Wofford, who gave $100,000 for its endowment, was opened in 1855; Central College, at Fayette, Mo., in the same year; the Southern University, at Greenboro, Ala., in 1856; the Kentucky Wesleyan University, at Millersburg, Ky., in 1858. The civil war had a most disastrous effect upon the Methodist as well as upon the other literary institutions of the Southern states. A number of colleges and other institutions wholly perished; others were closed during the greater part of the war, and have been, since then, but gradually revived. Thus, there were in the state of Alabama three colleges for males, all in a flourishing condition, two of which had their entire endowments swept away; while the third, the Southern University, was greatly reduced in its means, and only kept open in some of its departments. Since the close of the war, great efforts have been made by the Church to enlarge her educational work. The unfortunate condition in which the finances of most of the Southern states found themselves, proved, of course, a great obstacle; but, more recently, great strides in advance have been made, and; at present, the Church, possesses, in Vanderbilt University, at Nashville, Tenn., the best endowed institution of learning in the South. The movement for the establishment of this institution began in 1871, when delegates were appointed to a convention to consider the subject of a university, such as would meet the wants of a church demanding a higher Christian education than could be obtained in the South and South-west. It declared that one million of dollars was necessary to perfect the plan, and refused to authorize steps towards the selection of a site, until the public showed itself in sympathy with the movement, by a valid subscription of half that amount. It was early discovered that, in the exhausted condition of the South, so soon after the war, it was not practicable to pursue the enterprise. The project was in abeyance, when Cornelius Vanderbilt, of the City of New York, donated $500,000, to which he subsequently added $200,000. The institution was dedicated and inaugurated in Oct., 1875. (See VANDERBILT UNIVERSITY.) In Texas, a convention was called in 1869, to consider the propriety of consolidating four chartered colleges of the Church, the oldest of which, Rutersville College, had been chartered in 1860 by the Congress of the Republic of Texas. The convention met in 1870, resolved upon the establishment of a united central institution, and declared not less than $500,000 necessary to carry out the design. The new institution was opened, in 1874, as Texas University, and, in 1875, chartered as Southwestern University (q. v.). The total number of chartered colleges enumerated in the Report of the Commissioner of Education for 1875, was 16. All of them are in the Southern states, with the exception of one in California, and one in Oregon. The latter, Corvallis College (q. v.), was opened in 1865, and the legislation of the state, in 1869, placed the agricultural college of the state in connection with it. The Church has a large number of female colleges and high schools under her control. The Wesleyan Female College, at Macon, Ga., is the oldest institution of this kind in the United States, having been chartered by the Legislature of Georgia, in 1836, under the name of the Georgia Female College. The Greenboro Female College, at Greenboro, N. C., is only a few years younger, having been founded in 1841. Other prominent institutions of this class are, the Montgomery Female College, at Christiansburg, Va.; the Central Female College, at Lexington, Mo.; the Thomasville Female College, at Thomasville, N. C.; the Wesleyan Female Institute, at Staunton, Va.; Davenport Female College, at Lenoir, N. C.; Martin Female College; at Pulaski, Tenn.; the Martha Washington College, at Abington, Va.; the Wesleyan Female College, at Murfreesboro, N. C.—One of the most interesting and important institutions in connection with the Southern Methodist Church, is the Culleoka Institute, in Mora Co., Tenn. It is a model high school, as well as an academy affiliated to Vanderbilt University. There has always been a strong feeling in this Church against special schools of theology. Biblical instruction in connection with the regular college course is, however, afforded in most Southern Methodist Colleges.

MEXICO, a republic of North America; area, 741,800 sq. miles; population, about 9,276,000, made up of whites, Creoles, Indians, half-breeds, and a few negroes. The language of the country is Spanish; and the ruling religion, the Roman Catholic. Mexico was discovered by the Spaniards early in the 16th century, and was conquered by Cortes, 1519—21. It continued in the possession of Spain up to the beginning of the present century, when it established its independence. Since that time, it has passed through a number of revolutions and civil wars. When the Spaniards came to Mexico, they found there the intelligent and highly cultivated Aztecs. This people had been preceded by others who had also attained a high degree of civilization. In many of the arts and sciences, the ancient Mexicans, when conquered by Cortes, had made great progress. Their calendar was more correct than that of the ancient Greeks and Romans. They knew how to manufacture paper, and possessed maps, on which even the roads were marked which their ancestors had used when they came to Mexico. The education of children was of a very severe character. In each family of the higher classes, the boys remained with their mothers up to the 6th or 7th year, when they received a carefully selected companion; and in their 10th or 12th year, they were sent to the temple, to be educated by the priests. Here they were subjected to a strict discipline, and were instructed in the liturgy, and in various other subjects. The girls were also received into the temple, which they did not leave until they were married. For the boys, there were also military schools. As in the other Spanish colonies, very little was done for education by the Spaniards. A university and a number of colleges had been established, in which the teachers were generally priests who had been educated in Spain. But insufficient as the instruction was, under Spanish rule, it became worse under the republic. The continual civil wars prevented all progress in education; while the hatred for every thing that came from Spain, tended to destroy all educational institutions previously established. Hence, the education of the whites, who alone had been cared for by the Spanish government, was now neglected; while the native population continued to be neglected. By the law of 1846, the federal government transferred the care of the schools to the separate states, in some of which considerable progress has been made. Recently, the federal government has again established secondary schools in the capital, principally for the education of teachers. Compulsory education laws have been passed in most of the states; but in some they are entirely inoperative. In 1875, president Lerdo de Tejada, in his message to congress, referred to education in the following words: "Public instruction has continued to merit particular attention. Both in the primary and in the professional schools, efforts have constantly been made to afford the elements of instruction, by establishing new professorships, as well as by providing all the instruments and other useful apparatus for practical teaching. With the same desire to obtain the most complete practical instruction, various pupils of the national schools have continued to be sent abroad upon the successful conclusion of their studies." — Primary schools have now been introduced in almost all of the states. The schools are supported by the state governments, with pecuniary aid from the federal government, the municipalities, and several private associations, among which the Lancasterian Society and the Benevolent Society in Mexico occupy a prominent position. The Lancasterian Society supplies the government schools with teachers. There are also, in all the principal cities, private schools; but these are open only to the children of the rich. The plan of instruction comprises only the most necessary subjects, and the text-books are written in accordance with this plan. In 1874, the total number of private schools was 8,040; of which 5,691 were for boys; 1,615, for girls; and the rest were common to both sexes. Of the total number, 603 were supported by the federal and state governments; 5,240, by the municipalities; 378, by private corporations; and 117, by religious associations; 1,518 were private schools, in which tuition is paid for; and 184 were without classification. The proportion of the number of schools to the population, was one primary school to every 1,141 inhabitants. The attendance, during the same year, was about 349,000, or something less than one-fifth of all the children between the ages of 6 and 13 years. There are also, in some of the larger cities, evening schools for adults of both sexes. The total expenditure for primary instruction, during the year 1874, was $1,632,436, of which $1,042,000 was furnished by the municipalities; $417,000, by the federal and state governments; and $173,000, by individuals and private corporations.

Secondary instruction is imparted in national and state colleges, and in Catholic seminaries. The course of studies, in these institutions, comprises Spanish, French, and Latin grammar, history, geography, natural philosophy, and mathematics. In some colleges, other branches are added; as the English language, law, medicine, engineering, agriculture, and theology. In 1874, there were 54 state and national colleges, with 9,337 students; and 24 Catholic seminaries, with 3,800 students. Law was taught in 33 of the colleges; medicine, in 11; engineering, in 9; agriculture, in 2; and theology, in 24. There were, also, 15 higher schools for girls, with 2,300 students. The University of Mexico only grants diplomas, no studies being pursued there, as all the instruction is given in the colleges. The total expense of supporting the government colleges, in 1874, was $1,100,000, of which $200,000 was expended in fellowships, which entitle those who hold them to free board and lodging in the college building. There were, in the same year, 5 special schools in the federal district; 1, of mines and engineering; and 1, each, of medicine, law, agriculture, and the fine arts; the last mentioned was attended by about 700 pupils of both sexes. The city of Mexico has also a school for deaf-mutes.—See Schmid, *Pädagogische Encyclopädie*, art. *Süd-America; Report of the U. S. Commissioner of Education for* 1874.

MIAMI UNIVERSITY, at Oxford, Ohio, was organized in 1824. It has a preparatory, an undergraduate, and a post-graduate course, and is composed of six schools; namely, Latin language and literature; Greek language and literature; modern languages and English philology; mathematics; natural science: and philosophy and literature. The cost of tuition is $40 a year. The libraries contain about 9,000 volumes. The university has valuable cabinets and apparatus. In 1872—3, there were 6 instructors and 86 students. The university is temporarily closed.

MICHIGAN, one of the western states of the American Union, was at first included in the North-west Territory, set apart by the ordinance of 1787. Subsequently it formed a part of the territory of Indiana; but, in 1805, was organized as a separate territory. In January, 1837, it was admitted into the Union as a state, Wisconsin Territory having been formed from its western portion. At the next census, in 1840, the population of Michigan was 212,267; in 1870, it was 1,184,059, of whom 11,849 were colored persons, and 4,926 Indians. The land area of the state is 56,451 sq. m.

Educational History.—One of the first acts of the first legislature of Michigan, in the year 1836, required the governor to appoint a superintendent of public instruction, and made it the duty of such superintendent, "to prepare a system for the common schools and a plan for a university and its branches." The appointment was given to the Rev. John D. Pierce, who still lives (1876); and few men have ever lived to see so abundant fruit from the seed of their planting. In 1837, he reported the "system" and the "plan," and both were adopted, without material change, by the legislature. The primary school law comprised 45 sections originally; and though, from subsequent legislation, the same code now numbers nearly two hundred sections, yet the general features of the system have been changed in no essential respect. The same may be said of the original plan of the university; and now, after a trial of forty years, the educational system of Michigan has the reputation of being one of the best in the Union. Since the adoption of the constitution, in 1850, the superintendent of public instruction has been elected biennially, with other state officers. He has a general supervision, without much actual power, over all the educational institutions of the state, including local colleges and incorporated private schools; and all such institutions are required to make an annual report to him. Since the establishment of the office, there have been eight incumbents, serving in the order and for the time here named: John D. Pierce, 5 years; F. Sawyer, Jr., 2 years; C. C. Comstock, 2 years; Francis W. Sherman, 6 years; Ira Mayhew, 8 years; John M. Gregory, 6 years; Oramel Hosford, 8 years; and Daniel B. Briggs, the present incumbent, 4 years.—A *state teachers' association* was organized in 1852. It holds its meetings annually, in December; and is sustained now, as heretofore, by the leading teachers and educators in the state.—The *primary-school fund* of the state, most of which pays 7 per cent, is $3,130,911.05. There are 398,080 acres of primary-school lands yet unsold, and held at four dollars per acre.

School System.—Each township has a board of three *school inspectors*, whose main duty is to organize and regulate the boundaries of school-districts. Each district has an *executive board* of three members, who make provision for such length of school terms, as is determined by the votes of the district; but which must be nine months, in districts having 800 children of school age; five months, in districts having 30 children; and three months, in all districts containing a number less than 30, under a penalty of forfeiture of their share of the interest derived from the primary-school fund (about 50 cents *per capita*), and the tax of 2 mills on each dollar of the property in the district, which amounts, on an average, to about one dollar per child. This constitutional provision assures a school in nearly every district in the state. The district board determines the amount of taxes to be raised each year in addition to the statutory two-mill tax, and primary school money for the support of the school; but taxes for building purposes must be voted by the district. The districts are not compelled by law to build houses; but the greater portion must have a house or no school, and few districts are, for any length of time, without a school-house. The district boards make their annual reports to the inspectors, by whom these are collated, in the several townships, and forwarded to the superintendent of public instruction. All contracts with teachers must be in writing, and no public money can be legally paid to a teacher who has not a certificate in the form prescribed by law. All school officers are liable to a fine, and district officers to removal, for delinquency in the discharge of their duty. Parents are liable to a fine, if they fail to send their children to school three months in the year, while over eight and under fourteen years of age; but little respect is paid to this law. Districts having 100 children of school age, may have a board of 6 trustees; but, since the enactment of this provision, the powers of all districts have been so enlarged that these districts — styled graded-school and high-school districts — have hardly any superior privileges, except that they may establish a high school, in which a charge may be made for tuition, instruction in all other departments being free. A very small number, however, of the districts (nearly 300) organized under this law, have ever charged tuition to the resident pupils. These high schools are, many of them, of a superior grade; and pupils graduating from them after a satisfactory examination, are admitted to the state university without re-examination. The working of the school system is generally satisfactory, except in regard to supervision. After eight years' trial of a *county superintendency*, the state, in 1875, returned to a *township superintendency*, each township (not including the cities) having a superintendent, who examines teachers, grants certificates, and visits schools. The present system of supervision is not, however, giving that satisfaction which insures its long continuance. It may also be said that the supply of really competent teachers is not equal to the demand ; although a marked improvement in the qualifications of teachers was manifest under the county superintendency.

Educational Condition.—There are (1876) 5,411 ungraded-school districts, each employing a single teacher, and 297 graded-school districts requiring about 2,000 teachers. The graded schools have regular courses of study, from the lowest primary grade to that of the senior year of the high school. The whole number of school buildings in the state is 5,787, valued in the aggregate at $9,115,354. The 297 graded-school districts have 539 buildings, valued at $5,775,790, showing an average of $10,716 each. Twenty-five of these buildings cost over $20,000 each, and several cost from $50,000 to $100,000 each.

The support of the schools, during the year 1874—5, was derived from the following sources :

Balance from preceding year	$675,892.40	
Primary school interest fund	218,036.29	
District taxes	2,341,923.71	
Statutory tax (2 mills on $1).	508,551.87	
Tuition of non-resident pupils	37,453.65	
All other sources	401,722.97	
Total		$4,183,580.89

Expenditures during the year 1874—5 :

Teachers' salaries	$1,958,481.15	
Buildings	550,661.64	
Bonded indebtedness	398,106.41	
Other purposes	619,112.98	
Total		$3,526,362.18

The principal items of *school statistics*, for the year 1875—6, are the following:

Number of children of school age (5—20)		449,181
Number " " attending school		343,981
Number of teachers, males	3,156	
females	9,120	
Total		12,276
Average monthly wages of teachers, males		$51.29
females		$28.19

Normal Instruction.—The state normal school, at Ypsilanti, was opened in 1852. It is under the general supervision of a board of education consisting of three members, elected on a state ticket for six years, and the superintendent of public instruction, *ex officio*. It has an endowment fund of $69,255, the balance necessary for its support being derived from appropriations by the legislature. The value of its buildings and other property is about $75,000. The annual current expenses are nearly $25,000. The number of students, in 1875, in the normal department, numbered 409,—187 males and 222 females; in the experimental department, there were 200 pupils, making a total of 609. All students, on entering the normal department, are required by law to file a declaration of their intention to teach. The tuition fee is $10 per year; but each member of the lower branch of the legislature may appoint two students, residents of his district, who are entitled to admission, and to receive instruction free of charge. Many avail themselves of this privilege. The diploma of the school licenses the holder to teach in any of the public schools of the state. Nearly 7000 teachers have received instruction in this school during its existence. The board of instruction consists of a principal and 12 assistants.

Secondary Instruction.—Under this head may be classed high schools and academies. There were, in 1874, 311 graded schools in the state. Of these, 144 made reports as to organization etc., and 84 were reported as having high-school departments, with an aggregate of 5,642 pupils, and, in 1873, 303 graduates. The subject of high schools has assumed unusual interest and importance in this state, (1) on account of an effort recently made to have their existence declared, by the courts, illegal; and (2) on account of their peculiar status as direct tributaries to the state university. The first effort failed, the court ruling that, though there was nothing in the school law expressly directing their establishment, there was nothing, on the other hand, forbidding it. This decision has been regarded as final, not only for the state of Michigan, but for other states in which the school law is so worded as to raise a doubt on this point. (See HIGH SCHOOLS.) The peculiar relation of the public high schools to the state university is the result of an arrangement by which high schools that wish to be recognized by the university in such a way as to permit their graduates to enter the latter without further examination, are visited and examined as to course of study and methods pursued, by a committee of the faculty. This examination lasts one day for each school; and, if the school is rejected by the committee, the reasons are distinctly stated. If the school is accepted, its graduates are admitted to the freshman class of the university without examination. This method facilitates their admission only, their continuance depending entirely upon their proficiency, which is tested by the usual term examination. The effect upon the high schools has been beneficial by raising the grade of scholarship for graduates, and by maintaining the schools on that higher level produced by the dignity of their position as stepping-stones to the university. In the latter, the direct effect has been uniformity of scholarship, and a decrease of necessary watchfulness on the part of professors and tutors, for individual deficiencies. Though, by the old method, there may have been, in individual cases, greater proficiency at the time of admission, the great diversity of attainment shown by members of the same class was likely to be maintained to the end of the college course, and the diplomas given to graduates had, therefore, widely different values. By the new method, uniformity of attainment, by being insisted on at an earlier period, produces uniformity of attainment at graduation. This plan, though regarded at first with misgiving, if not positive disfavor, is gradually working its way to general approval. Those more immediately interested in it and best capable of judging of its effects — the teachers of the schools, and the faculty of the university— regard its success in the near future as assured. The private schools of the state are reported by the present superintendent of instruction as "few and feeble, owing to the excellence of our free public schools." The number reported in 1873 was 133, with 6,761 pupils. This is thought to be much below the actual number. Business colleges exist in several of the cities and towns, 13 being reported in 1874, with 32 instructors and 1,506 students. Of the latter, 196 are females.

Denominational and Parochial Schools. — These institutions are not numerous. A few are reported in different parts of the state, managed by Catholics and German Lutherans, where instruction is given to a few thousand children, but a vast majority of the children and youth of the state find their only source of education in the public schools.

Superior Instruction.—The names etc. of the higher institutions of learning are contained in the following table. For further information in regard to them, see the respective titles.

NAME	Location	When founded	Religious denomination
Adrian College	Adrian	1859	M. Epis.
Albion College	Albion	1864	M. Epis.
Battle Creek College	Battle Creek	1875	Advent.
Grand Traverse College	Benzonia	1865	Cong.
Hillsdale College	Hillsdale	1855	F. W. Bap.
Hope College	Holland City	1863	Ref.(D'ch)
Kalamazoo College	Kalamazoo	1855	Bap.
Olivet College	Olivet	1858	Con. & Pr.
University of Michigan	Ann Arbor	1841	Non-sect.

In none of these institutions is any distinction as to sex made in the admission of pupils; but there are, besides, several institutions specially for the education of females, among which may be particularly mentioned the following: Michigan Female Seminary, at Kalamazoo, under the patronage of the Presbyterians, was organized in 1867, and conducted on the plan of the celebrated Mt. Holyoke Seminary in Mass. Its property is valued at $70,000, and its annual income is about $10,000. The Young Ladies' Seminary and Collegiate Institute, at Monroe, was incorporated under the laws of the state, and has been in operation about 30 years. It holds property valued at $40,000. It has a regular college course, besides post-graduate courses. Music, drawing, painting, and the modern languages are taught. Degrees are conferred as in colleges for young men. The number of instructors is 8; and the number of students, in 1875, was 103.

Professional and Scientific Instruction. — There are two institutions for this kind of instruction, — the State Agricultural College at Lansing, and the Detroit Medical College. Nearly all the institutions, however, enumerated under *superior instruction* have departments in which professional or scientific instruction is given. The Agricultural College of Michigan was the first state institution of its kind established in the United States. By an act of the legislature, in 1855, it came into existence and was opened for students in the spring of 1857. Until recently, it has been supported wholly by appropriations from the state treasury, aside from $56,320 realized from appropriated state lands. The appropriations from the state treasury for the college, up to the present time, amount to $397,787. The farm consists of 676 acres, situated on both sides of the Cedar river, three miles distant from the capital of the state; and 300 acres are under cultivation. The property of the college is valued at $250,000. The agricultural land grant by Congress, in 1862, gave Michigan 240,000 acres. From this has been realized $228,933, and the portion yet unsold is valued at $496,543. These avails go into the state treasury and constitute a permanent fund, on which the state pays 7 per cent. The number of students in attendance during the past year (1875—6) was 120. The students receive board and lodging at the institution at cost, which is about $2.60 per week; but, quite one half of this expense is met by allowances granted the students for manual labor performed. Tuition is free, and the incidental fees are a mere trifle. The faculty and other officers number 14. The control of the college is vested in a board of agriculture, the members of which are appointed by the governor, for a term of six years. The governor of the state and the president of the college are members, *ex officio.*

Special Instruction.—The State Public School at Coldwater, partakes of the nature both of a school and an asylum. The object is to educate the dependent children from the poor-houses. It originated in 1871, when a state appropriation of $30,000 was made, and three commissioners were appointed to carry it into effect. A gift of 20 acres in the town of Coldwater and of $25,000 towards the buildings, led to its location at that place, and this was supplemented by an additional appropriation of $38,000 by the legislature. The plan of the buildings consists of a large central edifice, and surrounding cottages for the home residence of the children. It receives children between the ages of 4 and 16 years from the county poor-houses, and provides for and educates them till good homes are found for them. They are strictly the wards of the state till 21 years of age. There is an agent in each county whose duty it is to look after those who are indentured to, or adopted by, individuals, and, in case of any violation of the terms of indenture, to return them to the school. The school was opened in 1874, with nearly 200 children; the number, in September 1875, was 171. The number of officers is 18, consisting of a superintendent, teachers, matrons, etc. The aim of the institution is, to give a fair elementary education. Since its establishment, the legislature has made appropriations for its support to the amount of $187,565.—The State Reform School, at Lansing, was established, in 1856, for the purpose of rescuing, if possible, from a life of crime, children and youths convicted of offenses against the law. It receives boys of from 10 to 16 years of age, and is strictly an industrial school. It is managed by a board of control, consisting of three members appointed by the governor, and is supported by annual appropriations from the state treasury, and the earnings of the inmates. Five hours of each day are spent in school; and four, in manual labor. The officers are a superintendent and an assistant, and 3 teachers, besides overseers of the farm and shops. The annual expenses are from $25,000 to $30,000. The school has at present 220 inmates. Over 1,600 boys have been cared for by the institution since its establishment.—The Michigan Institution for the Deaf and Dumb, and Blind, was organized at Flint in 1854. About 94 acres are contained in the grounds and the farm connected with them. It is managed by a principal, steward, matron, assistant matron, physician, and 17 teachers in all departments, with a few minor assistants. In addition to the usual mental instruction given in such institutions, the pupils are trained in mechanical and industrial occupations. In some of these departments the sale of wares produced has more than paid expenses, and the surplus has been devoted to the support of the library. About 200 inmates were receiving instruction in 1874.

The *educational journals* published in the state are, *The Michigan Teacher*, a monthly, published at Kalamazoo, and *The School*, a monthly, published in Ypsilanti. The publication of the former was begun nearly 20 years ago. Both are ably edited, and have a very general circulation in the state.

MICHIGAN, University of, at Ann Arbor, owing its foundation to a grant by Congress, in 1826, of two townships of land, to the territory of Michigan, was established by a legislative act, March 18., 1837, and was first opened for students, Sept. 20., 1842. It is a part of the public educational system of the state, and is governed by a board of regents, elected by popular vote, each for a term of eight years. Under certain conditions, the graduates of the public high schools of the state are admitted without examination. The university comprises the departments of literature, science, and the arts (including the school of mines, organized in 1875); the department of medicine and surgery, organized in 1850; the department of law, 1859; the homœopathic medical college, 1875, and the dental college, 1875. Each of these departments and colleges has its special faculty of instruction, having charge also of its management. The University Senate is composed of all the faculties, and considers questions of common interest and importance to them all. The department of literature, science, and the arts embraces six regular courses of four years each, and two shorter special courses. The regular courses, with the degrees that are conferred, upon their completion, are as follows: classical (Bachelor of Arts), scientific (Bachelor of Science), Latin and scientific (Bachelor of Philosophy), Greek and scientific (Bachelor of Philosophy), civil engineering (Civil Engineer), mining engineering (Mining Engineer). A full course in architecture and design was opened in 1876. The special courses are one in analytical chemistry, and one in pharmacy. On the completion of a two years' course in pharmacy, the degree of Pharmaceutical Chemist is conferred. Students may also pursue selected studies for any period not less than one term. Post graduate courses are provided, leading to the degrees of Master of Arts, of Philosophy, or of Science, and Doctor of Philosophy, as well as for those not candidates for a second degree. After 1877, the master's degrees are not to be conferred "in course." The technical courses of the department of literature, science, and the arts, are grouped together and known as the Polytechnic School. The regular courses in the professional departments are for two years. Both sexes are admitted to all the departments; but the courses of lectures for women, in the medical departments, are distinct from those for men. The only charges made by the university are to residents in Michigan, an admission fee of $10, and the annual payment of $15; to those who come from other states or countries, an admission fee of $25, and the annual payment of $20. The number of instructors and students in the different departments, in 1875—6, was as follows:

Departments	Instructors	Students
Literature, etc.	31	452
Law	6	321
Medicine and surgery	10	312
Dental college	3	20
Homœopathic med. college	2	24
Total, deducting repetitions	49	1,127

The students in the department of literature, science, and the arts were classified as follows: resident graduates, 15; in the regular classes, 339; in selected studies, 19; in pharmacy, 79. Of these, 149 were in the Polytechnic School. The university grounds embrace 44½ acres, and contain an astronomical observatory; a central building, called University Hall, for the department of literature, science, and the arts; buildings for the departments of law and medicine; a hospital; a chemical laboratory; and residences for the president and the professors. The observatory, erected by citizens of Detroit, was opened in 1854, and is supplied with the most approved instruments. The university museum contains valuable and constantly increasing collections, illustrative of natural science, ethnology, art, history, agriculture, anatomy, and *materia medica*. The geological, zoölogical, and botanical cabinets together are estimated to contain about 57,250 entries and 255,000 specimens. The libraries accessible to the students contain about 31,000 volumes. The university fund, being the proceeds of the sale of the university lands, amounts to about $550,000. It is held in trust by the state, which pays interest thereon at the rate of 7 per cent per annum. The present annual income of the university amounts to nearly $120,000.

Previous to 1852, under the regulations then in force, there was no president of the university.

Since that time, the office has been filled as follows: Henry P. Tappan, D. D., 1852—63; Erastus O. Haven, D. D., 1863—9; Henry S. Frieze, LL. D. (acting), 1869—71; James B. Angell, LL. D., appointed in 1871 and still (1876) in office.

MIDDLEBURY COLLEGE, at Middlebury, Vt., founded in 1800, though not denominational by its charter, is under the direction of Congregationalists. The grounds, embracing about 30 acres, occupy a commanding eminence. It has productive funds to the amount of $180,000, a library of more than 12,000 volumes, and valuable cabinets of natural history. The cost of tuition is $45 per annum. There are several scholarships, besides other beneficiary funds, for the aid of needy students. In 1875—6, there were 8 instructors and 53 students. According to the triennial catalogue of 1871, there were 1,160 *alumni*, of whom 721 were living. Of the whole number 481 (274 living) became clergymen. The presidents have been as follows: the Rev. Jeremiah Atwater, S. T. D., 1800—1809; the Rev. Henry Davis, S. T. D., 1810—17; the Rev. Joshua Bates, S. T. D., 1818—39; the Rev. Benjamin Labaree, S. T. D., LL. D., 1840—66; the Rev. Harvey Dennison Kitchel, S. T. D., 1866—1875; and the Rev. Calvin B. Hulbert, D. D., the present incumbent, elected in 1875.

MILITARY SCHOOLS. Special institutions for the education of army officers now exist in all European countries, though they are of comparatively modern origin. The first military school in France was established by Louis XV., at Vincennes, in 1751. It was, soon after, removed to the Champ de Mars, Paris, but it has long ceased to exist as an institution for instruction. The Special Military School of St. Cyr, near Versailles, was founded by Bonaparte in 1802, and, for the first few years, was located at Fontainebleau. Candidates are admitted by competitive examination, and must be between 17 and 20, or, if from the army, not over 25 years of age. The course is for two years, and embraces geography, German, literature, drawing, legislation and administration, hygiene, topography, military art and history, artillery, fortification, and military exercises. The pupils pass either to the Staff School, in Paris, the Cavalry School, at Saumur, or to the army as sub-lieutenants of infantry. The St. Cyr School has about 700 pupils. The Polytechnic School, in Paris, opened in 1794, and organized by La Place in 1799, though not specially military in character, affords theoretical instruction in various military and related branches. There are also the Artillery and Engineers' School, at Fontainebleau, for officers; for the education of officers, the artillery schools at Valence and Nîmes, the School for Non-commissioned Infantry Officers, at Camp d'Avor;—also the Military Orphan School, at La Flèche, the Military School of Medicine and Pharmacy, in Paris, the Military Pyrotechnic School, in Bourges, and the Normal School for Gymnastics, in Vincennes.—In Great Britain, the most noted institutions are the Royal Military Academy, at Woolwich, founded in 1741, and the Royal Military College, at Sandhurst, founded in 1799. The former is intended for officers of the artillery and engineers. The course is for two years and a half, and embraces mathematics, elementary chemistry and physics, French or German, military drawing and *reconnoissance*, fortification, artillery, military history and geography, drills, and exercises. Candidates are admitted by competitive examination, and must be between 16 and 18 years of age. The number of pupils is about 200. The college at Sandhurst is intended for officers of the cavalry and infantry. Admission is by competitive examination. The course is for one year, and embraces the elements of tactics, infantry and field-artillery drill, the regulations and orders of the army, accounts and correspondence, gymnastics, riding, regimental interior economy, military topography and reconnoissance, field fortification and the elements of permanent fortification, and military law. There are 250 students. The Staff College, at the same place, for the instruction of staff officers, formerly the senior department of the Royal Military College, is now a distinct institution. The course is for two years, and embraces French, German, or Hindoostanee, military administration and law, fortification and field engineering, geology, military art, history and geography, artillery, riding, topography, *reconnoissance*, and military telegraphy and signaling. Admission here, also, is by competitive examination, open to officers of all arms who have served five years. The number of students is 40. Besides these institutions, may be mentioned the Royal School of Military Engineering, at Chatham, the School of Gunnery, at Shoeburyness, the School of Musketry, at Hythe, the Military Medical School, in London, and the Royal Hibernian Military School, in Dublin.—In Germany, military instruction is given in the following institutions: for officers, the war academies in Berlin and Munich (for higher scientific education, especially for the general staff); for the education of officers, the united artillery and engineers' schools in Berlin and Munich, the war schools at Potsdam, Erfurt, Neisse, Engers, Kassel, Hanover, Anclam (Prussia), Metz (Lorraine), and Munich (Bavaria), the Prussian, the Bavarian, and the Saxon cadet corps; six schools for the education of non-commissioned officers; also the Medico-Surgical Frederick William Institute, the Medico-Surgical Military Academy in Berlin, the Military Veterinary School in the same place; the musketry schools at Spandau and Augsburg, the School of Gunnery, the Superior Pyrotechnic School, and the Central Gymnastic Institution in Berlin; and the military riding institutes in Hanover, Dresden, and Munich.—In Prussia, the senior cadet school is in Berlin, and to this the junior cadet schools are preparatory. The usual course is for four years in the junior schools, and two years in the senior school, from which the pupils pass to a war school, though some remain an additional year in the senior cadet school. There is an examination for admission to the junior schools, and to the senior school for those who have not passed through the junior schools. The age of admission to the junior schools is about 10 years; to the senior, about 15. In the former, the course embraces arithmetic, elementary algebra and geometry, German grammar and composition, French, Latin, Bible history, natural philosophy, drawing, writing, history, drill, gymnastics, fencing, and dancing; in the latter, geography, mathematics, physics, drill, fencing, imitative drawing, Latin, German, French, history, military drawing, religious instruction, riding, and gymnastics. For the additional year, the branches are topography, military service and correspondence, science of arms, military exercises, fortification, tactics, military surveying and drawing, French, etc. Each junior school has about 200 pupils; and the senior school, about 700. The war schools are intended for officers of the infantry and cavalry, and as preparatory to the Artillery and Engineers' School. The course is for about nine months, and embraces musketry practice, tactics, science of arms, riding, fencing, fortification, military surveying and drawing, gymnastics, manual of the piece in artillery, drill in infantry exercises, with about six weeks' field exercise in applied tactics, *reconnoissance*, and surveying. The War Academy is intended for the education of officers for the staff, as military instructors, and for other high duties. Candidates are admitted by competitive examination, open to officers of all arms of three years' active service. The course is for three years, and embraces French, Russian, military hygiene and law, general, physical, and military geography, tactics, history of literature, geodesy, mathematics, science of arms, history of the art of war, fortification, military administration, history, surveying, art of siege, chemistry, staff duty, physics, with practical field instruction in staff duty, surveying, field-sketching, etc. There are about 275 students in this institution. The military schools of other European countries are similar, in their general features, to those already described.—In Austria-Hungary, there are the following: for officers, the War School (for the general staff), the higher Artillery and the Higher Engineering Course, the Preparatory Course for Candidates for the Artillery Staff, the Central Infantry Course, the Intendancy Course (affording a preparation for the military intendancy), all in Vienna, and the Royal Hungarian Landwehr-Cavalry School, at Jászbérény; for the education of officers, the Military Academy, in Wiener-Neustadt (for infantry and cavalry), the Technical Military Academy, in Vienna (for the artillery and engineers), the Ludovica Academy, in Buda-Pesth (for the Hungarian Landwehr); preparatory to the academies, the Military Superior Real School, in Weisskirchen, the military inferior real schools at St. Pölten and Güns; the Military Medical Course and the Military Riding Institute, in Vienna.—The Russian Institutions are as follows: for officers, the Nicholas Academy (for the general staff), the Michael Artillery Academy, the Nicholas Engineering Academy, the Military Juridical Academy, all in St. Petersburg; for the education of officers, six war schools (two for infantry, and one each for cavalry, artillery, and engineers in St. Petersburg, and one for infantry in Moscow), the Imperial Page Corps, in St. Petersburg, the Finnish Cadet Corps, in Helsingfors, eleven infantry, two cavalry, and four Cossack schools for young noblemen; as preparatory institutions, 17 military gymnasia and 9 military progymnasia;—for special instruction, the Military Law School, the Military Topographical School, the Preparatory School for the Guards, the Military Surgical School, the Technical and Pyrotechnic School, all in St. Petersburg, and two gunsmithery schools.—Italy has the following: for officers, the War School, in Turin (for the highest instruction and the general staff), the Artillery and Engineers' School, at the same place; for the education of officers, the Military Academy, in Turin (for the artillery and engineers), the Military School, in Modena (for infantry and cavalry); as preparatory institutions to the Military Academy and Military School, the military colleges, in Naples, Milan, and Florence; also the Normal Infantry School, in Parma, and the Normal Cavalry School, in Pinerolo.—Besides the schools for officers of the character already indicated, there are in nearly every European country regimental or battalion schools for the instruction of privates or non-commissioned officers in the common branches of learning.—In Brazil, military instruction is given in regimental schools, for training non-commissioned officers; preparatory schools; the Military School, in Rio de Janeiro; the Depot of Artillery Apprentices, in the same place; the Cavalry and Infantry School of the Province of São Pedro do Rio Grande do Sul; and the General Gunnery School of Campo Grande.—In the Military Academy, at West Point, N. Y., founded in 1802, the United States has an institution second to none of its kind in the world. The organization, course, etc., are described under the appropriate title. (See West Point.) There is also an Artillery School at Fortress Monroe, organized in 1867. The act of Congress of 1862, donating land to the states for the establishment of agricultural and mechanical colleges, includes military tactics among the branches to be taught in those institutions. An act of 1866 authorizes the president to detail officers of experience to act as professors of military science in institutions of learning, having over 150 male students. A number of institutions have availed themselves of this privilege. By the same act, provision is made for the instruction of enlisted men in the common English branches of education at every post, garrison, or permanent camp. In nearly every military department, there are schools for instruction in military signaling and telegraphy. A number of academies or high schools in the United States are organized upon military principles, in imitation of West Point, daily drill being required of the pupils.

Some of these are designed for boys not amenable to the milder discipline of the ordinary schools. Several institutions providing instruction of a collegiate grade, in classics, modern languages, and scientific branches, have a similar organization. Of these the principal, having separate articles in this work, are as follows: the Kentucky Military Institute, at Farmdale, Ky.; Louisiana State University, at Baton Rouge, La.; Norwich University, at Northfield, Vt.; Pennsylvania Military Academy, at Chester, Pa.; Texas Military Institute, at Austin, Tex.; and Virginia Military Institute, at Lexington, Va.—Gen. Hazen, in contrasting (1872) the French and Prussian system of military education, remarks that only about one-third of the French officers are of necessity educated men, while, in Prussia, all must be. In the French schools, there is almost a total absence of moral control; while, in Prussia, the opposite is true. In France, the great lack of a good preparatory education is loudly complained of, and the almost total neglect of mathematical subjects in the special schools is noticeable; while great attention is paid to drawing and all practical subjects of a military character. In the French system, the entire school course is given before service is seen; but, in Prussia, a certain amount of actual service must precede any theoretical course at the schools; nor is there in France, as in Prussia, any provision for recognizing, utilizing, and educating the talent of young men who have, by a few years' service, developed mental superiority. In Prussia, nothing is more striking than the connection between the military and civil education of the country. The competitive system is almost universally objected to, and mathematics are thought worthy of attention up to the highest grades only by those of peculiar aptness. The Academy, which gives a superior education to the first men of the army, is of great merit and usefulness. The greatest possible care is bestowed upon methods of study and instruction; the most remarkable feature of the system is the attention paid to forming and disciplining the mind and encouraging habits of reflection. The education is eminently practical.—In reference to West Point he says: "After seeing much of the best European armies, I believe that, at the breaking out of our war, our little regular army was officered by better technical soldiers than any army in the world; and this I believe to be due to West Point."—See H. Barnard, *Military Education; an Account of Institutions for Military Education in France, Prussia, Austria, Russia, Sardinia, Sweden, Switzerland, England, and the United States* (2 vols.).—A list of the military schools of all European States is given by Brachelli, *Die Staaten Europa's* (1875).—See Gen. W. B. Hazen, U. S. A., *The School and the Army in Germany and France.*

MILTON, John, a celebrated English poet, born in London, Dec. 9., 1608; died there Nov. 8., 1674. His father, being disinherited on changing his religion — which had been the Roman Catholic,—followed the profession of a scrivener, by which, we are told, he "got a plentiful estate." Young Milton was carefully educated. A private tutor gave him instruction in Latin, and perhaps in Greek, and imbued his mind with a love for poetry, and the writing of Latin and English verse. He next passed to St. Paul's School, where he was prepared for Christ's College, Cambridge, which he entered in 1625. Here, for seven years, he devoted himself, with great assiduity, to such studies as would fit him for a career of authorship instead of the usual one of a profession, all desire for which he had abandoned. At this time, his singular personal beauty and intellectual independence made him a marked character among his fellow collegians. On leaving Cambridge, in 1632, he spent five years in study and reading, chiefly classical, and the composition of poetry. The most beautiful of his shorter poems were written at this period of his life. In 1637, he set out upon his travels, visiting France and Italy, in both of which countries he formed the acquaintance of men eminent in science and literature. Paris, Florence and Rome were among the places visited by him at this time; and Grotius and Galileo, among the acquaintances thus formed. On receiving word of the struggle impending between the people of England and the king, he abandoned further travel, and hastened home. For several years, his energies were devoted to the cause of the revolution, to which he contributed many pamphlets, which established not only his great ability as a controversialist, but his mastery of vigorous and eloquent English prose. In 1643, he was married; but, within a month, a separation took place, owing to incompatibility of temper. This led to an attempt on his part to change the law relating to marriage, in the course of which he published some of the the most famous of his prose pamphlets. In 1644, he published his *Tractate on Education* and his *Areopagitica, a Speech for the Liberty of Unlicensed Printing.* In 1645, a reconciliation took place between him and his wife; and, for several years, he resided in London, devoting himself to literature. About 1654, he became totally blind, the malady being hastened by his zeal in writing a defense of the people of England against the usurpations of the king. His wife dying in 1652, or 1653, he married again in 1656, and again in 1663. About 1665, he completed *Paradise Lost* and began *Paradise Regained.* The last years of his life were passed in domestic disquiet, obloquy, and the contemplation of the defeat of the public measures and principles he had labored so long to establish. The prominence accorded to Milton by educationists rests principally upon his *Tractate on Education,* addressed in the form of a letter to Samuel Hartlib (q. v.). In this tractate is presented Milton's view of "a complete and generous education, to fit a man to perform justly, skillfully, and magnanimouly all the offices, both private and public, of peace and war." His first injunction is "to find out a spacious house and ground about it fit for an academy, and big enough to lodge 120 persons, whereof 20 or thereabouts may be attendants, all under the government of one who shall be thought of desert sufficient, and ability either to do all, or wisely to direct and oversee it done." Such an academy is to be both "school and university" — the sole place of instruction for the youth it contains, from the time of their admission to the time when they enter upon the duties of mature life. Their studies, their exercise, and their diet are separately considered. For the first, grammar is to be used as an introduction, giving special attention to the practical use of it, as in correct pronunciation and a knowledge of the rules most commonly used. Advantage, also, should be taken to cultivate indirectly the moral sense by the use, as text-books, of such works as have become classics. For this he recommends several in the Greek language. He attaches great importance, also, to the personal magnetism of the teacher, as a means for inciting his pupils to an "ingenuous and noble ardor." Arithmetic is to be taught at this period; and, shortly after, geometry. In the evening, the instruction is to be moral only. The next step is the study of agriculture, as found in the writings of Cato, Varro, and Columella. These authors are chosen for the double purpose of acquiring a mastery of "any ordinary prose," and for inciting in the pupils a desire in after life to "improve the tillage of their country." It will then be proper to go on to the study of maps, globes, and natural philosophy. Greek should then be taken up, and in a short time, trigonometry, fortification, architecture, enginery or navigation, and anatomy. Medicine, both theoretical and practical, should next be pursued. These studies should all be supplemented, as far as possible, by an observation of their application in practical pursuits. Moral instruction should now predominate. The lessons inculcated should be enforced by reading the moral works of Plato, Xenophon, Cicero, Plutarch, etc., ending at evening with the Bible. The next study should be that of political economy, followed by politics and law. Sundays and evenings should be devoted to theology, church history, and the study of Hebrew—the latter in order that the Scriptures may be read in the original. Then follow "choice histories, heroic poems, and attic tragedies," with "political orations," some of which should be committed to memory, and declaimed. Rhetoric, the art of composition, logic, and poetry next succeed; after which, he says, "whether they [the students] be to speak in parliament or council, honor and attention would be waiting on their lips." He next speaks of physical exercise. Wrestling and the use of the sword are specially commended, the breathing spells to be filled with music. About two hours before supper, the students are to be summoned to their martial exercises, on foot or on horseback, in fair weather or foul. These will give personal prowess and hardihood, and accustom the youths to habits of discipline, and the practical conduct of armies. Visits to the country, also, at favorable seasons, and foreign travel, are recommended to supplement the studies and exercises of the academy. Lastly, the students' food should be "plain, healthful, and moderate," and served in the same house. The proper age in which to pursue this curriculum is from the 12th to the 21st year. It will be seen from this synopsis, that Milton's view of a liberal education differed widely from that of the schoolmen of his day, in its estimate of the classics and natural science; while, in many respects, it exceeds the liberal tendencies of the most advanced educators of the present time. The period of childhood, which is now claiming so much of the attention of the educators throughout the civilized world, is not, indeed, considered by him; not, however, because it was overlooked, nor because he undervalued its importance; but, because "brevity" was his "scope." On nearly all of the great subjects that now agitate the educational world, this tractate is silent. Compulsory education, sectarianism, the relation of schools to the state, the education of women, the co-education of the sexes—none of these are mentioned. Yet, if the reader of to-day, wondering at its fame, and doubting its claim to special consideration, will transport himself to Milton's time, and note the influences by which he was surrounded — the almost universal disregard of the practical in education, and the blind worship of book knowledge—this "Letter to Master Samuel Hartlib" will appear almost a daring innovation; and the moral courage, as well as the sagacity, of its author will be unquestioned.

MILTON COLLEGE, at Milton, Wis., founded as an academy in 1844 and as a college in 1867, is under the control of the Seventh-Day Baptists. It is supported chiefly by tuition fees. Its endowment amounts to $6,000. The libraries contain about 2,100 volumes. It has philosophical and chemical apparatus and cabinets of botany, mineralogy, etc. The academic department has a teachers' course, an English and business course, and a preparatory course; the collegiate department has a classical and a scientific course. In 1875—6, there were 260 students in all courses. Both sexes are admitted. The principals and presidents have been as follows: the Rev. Bethuel C. Church, 1 year; the Rev. S. S. Bicknell, 3 years; the Rev. Amos W. Coon, 2 years; Prof. A. C. Spicer, 7 years; and the Rev. W. C. Whitford, the present incumbent (1876), 18 years.

MILWAUKEE, the chief city and port of entry of the state of Wisconsin, was settled in 1835, and incorporated as a city in 1846. Its population, according to the census of 1870, was 89,930; and its school population (between the ages of 4 and 20 years) 27,359, which, in August 1875, had increased to 33,919. The total population of the city, at present (1876), is about 120,000. Of the school population, in 1875, the number attending the public schools was 30.7 per cent; attending private schools, 21.3 per cent. Of the children between the ages of 4 and 15 years, more than 75 per cent attended either public or private schools.

Educational History.—The history of the public schools of Milwaukee, in its general character, does not differ greatly from that of other western cities which have grown into importance during the last thirty years. In all, the advance has been from the rude frontier school of the early settlers, in which only the rudiments of a common English education were taught, to the highly-organized system of the large city, with its several grades of schools, crowned with its high or normal school, and, sometimes, with a university. The first school taught in the city, was the private school of a Methodist minister, opened in the winter of 1835—6, in a building in East Water Street. The following year, the first public school organized under the school laws of the territory, was opened in Third Street. Since the incorporation of the city, in 1846, the progress of the schools has been rapid and steady. Two steps of sufficient importance to be noted, are the introduction of German as a regular study in the district schools, which took place in 1857, and the introduction of drawing and music, in 1873. The present school system was organized in 1846. The first school superintendent was Rufus King, 1859—60. His successors were, Jonathan Ford, 1860—62; A. C. May, 8 days in 1862; J. R. Sharpstein, 1862—3; Edwin De Wolf, 1863—5; F. C. Pomeroy, 1865—70; G. H. Paul, 1870—71; F. C. Law, 1871—4; James MacAlister, the present incumbent (1877), elected in 1874.

School System.—The supervision and control of the public schools are vested in a *board of education*, consisting of 26 members, 2 from each ward, who are appointed biennially by the aldermen, subject to confirmation by the common council. The board elect annually from their number a president, who is required to preside at all meetings, and to deliver an annual address. The school board is required, subject to the approval of the common council, to establish and organize a sufficient number of schools for the accommodation of the children of the city, for which the common council must purchase, or lease, lots and buildings, erect school-houses, and provide the necessary furniture. The board, is, also, authorized to define the boundaries of school-districts, to adopt suitable text-books, which must be uniform, and must continue in use without frequent change, and to enforce uniformity in the system of instruction employed in the schools. They also elect biennially a *superintendent of schools*, whose duties are to exercise a general supervision over the public schools, to examine into their organization and condition, to suggest to the teachers such changes, consistent with the school law, as he may deem expedient, and, in connection with a committee of the board, to examine teachers, to employ and classify them, and to dismiss them when necessary. The school law requires the establishment and maintenance of a high school, in which must be organized an academic department and a normal course for the special training of teachers for the public schools of the city. The course of study in the academic department embraces four years; that in the normal course, three. Pupils from the district schools, who are 15 years of age or over, of studious habits and good moral character, and who have passed an examination of the first grade, and received the superintendent's diploma for such examination, are admitted to the high school; but candidates who have not attended the district schools, may be admitted to the high school upon passing a special examination. A certificate of graduation, entitling the holder to teach in the public schools, may be given to each student in the normal department of the high school, who is not less than 18 years of age, and who has maintained a satisfactory standing in that department for one year. There are three kinds of schools,—branch schools, district schools, and the high school. The first are only adjuncts of district schools, and are opened whenever any of the latter are not adequate to the public needs. The work in the branch school is graded, but is of an elementary character. In the district schools, there are ten grades, occupying about eight years. The course of study embraces all the ordinary branches of an English education, together with German (graded like the other studies, and taught by a special teacher), and music, free-hand drawing, and calisthenics, graded and systematically taught by the class teachers. There are special superintendents, however, for each of these branches, who regularly inspect and supervise the work, and, in the case of drawing and music, hold all the examinations for promotion. In the high school, there are two courses—the classical and the English—each occupying four years. Three grades of certificates are granted to teachers, examinations for which are held in March, June, August, and December. The schools are supported principally by an annual city tax, levied by the common council on all taxable property. In 1875—6, this tax amounted to 1.85 mills on the dollar. The school age is from 4 to 20 years. The number of schools, in 1875—6, was 21, consisting of the following: high school, 1; normal department, 1; district schools, 13; branch schools, 6.—The following are the principal items of *school statistics* for the same year:

Number of pupils of school age	34,934
" " " enrolled in public schools	13,881
Average daily attendance	8,453
Number of teachers	197
Total receipts	$168,949.22
" expenditures	$164,210.15
" valuation of school property	$486,500.00

Connected with the public schools, is a teachers' library, the privileges of which are free to all teachers employed in the public schools, and to the pupils of the normal department of the high school. In addition to the means of instruction afforded by the public schools, there are many private and denominational schools. The number of the former, in 1873, was 47, in which instruction was given to 7,000 pupils, the number of whom, in 1875, was increased, to 9,269.

MINERALOGY. Under the head of *mineral substances*, or those which constitute the mineral kingdom, are included all inorganic bodies; that is to say, by strict definition, all substances that are not the products of life. By a similar strictness, we might be led to say that, the mineral kingdom being a division of nature, artificial products should be excluded from it. Nature, however, is not to be limited by our verbal definitions; organisms appropriate and use mineral substances without altering their composition, or they may, in the complex chemical reactions of vitality, give rise to a mineral substance, especially as a result of organic decomposition. Thus we have in bones mineral matter; and the carbonic acid breathed out by the visitor to the *Grotto del Cane* belongs as much to the mineral kingdom as that evolved from the floor of the cave. Again, nature rightfully claims as true mineral substances many which owe their existence to the art of man, being altogether identical in form, composition, and character with those of her own production. We can make no distinction between the crystal of salt formed by the artificial evaporation of brine, and a similar crystal produced by the natural evaporation of sea-water; or between the crystals of augite formed as furnace products and those of volcanic origin. Hence we see that, in reality, the mineral kingdom embraces all substances, in their constitution essentially inorganic, which occur in nature, even though they may have been formed under organic or under artificial conditions; and we thus include in this kingdom, not merely all solid bodies formed in the crust of the earth, but also all inorganic fluids, whether liquid or gaseous, within, upon, or above the earth. Among these, we are at once called upon to recognize the distinction between the different kinds of molecules that are presented to our notice, and the different forms under which these are aggregated; in ordinary language, we recognize *materials* and *structures*. To the materials we apply the term *minerals*. A material must be homogeneous; hence the definition of a mineral is "a natural homogeneous substance of inorganic origin." To mineral aggregates we apply the term *rocks;* but as fluid minerals, whether gaseous or liquid, can hardly be said to have structure in the sense in which the geologist uses the term, he defines *a rock* as "any aggregation of solid mineral particles which constitutes an essential part of the earth's crust." Imbedded within rocks, we meet with certain mineral bodies that present forms and structures undoubtedly of organic origin; to these, provided they are of a certain geological antiquity, is applied the term *fossil.* (See PALÆONTOLOGY.)—Each mineral is theoretically assumed to be capable of taking, under favorable circumstances, the form of a geometrical solid. This capability is due to forces inherent in inorganic matter, which causes its molecules to arrange themselves according to fixed laws about certain mathematically related axes. A perfect crystal is thus the outward expression of symmetrical internal structure, and is defined as "an inorganic solid bounded by plane surfaces symmetrically arranged, and resulting from the forces of the constituent molecules." (See DANA, *System of Mineralogy*, vol. I.) As the molecules of different kinds are variously affected by the molecular forces, the crystalline forms of different minerals vary accordingly. The form of the same mineral is always constant; not that it always occurs in crystals of identical form, but that all its forms are referable, under mathematical conditions, to one fundamental type. Its crystalline form is, therefore, regarded as an essential characteristic of a mineral species, which will embrace varieties resulting from modifications of the type; and, in this light, any particular crystal may be regarded as a mineral individual. The existence of such mineral structures is not incompatible with the definition of a rock given above, since crystals are not structures essential in the earth's crust. The formation of a crystal is interfered with by so many external and varying influences, that forms of exact symmetry are almost improbabilities; or, to quote Dana, "this symmetrical harmony is so uncommon that it can hardly be considered other than an ideal perfection."—The law that the same mineral is always limited to its own crystalline form is apparently contravened in many instances;—thus, we may have minerals of similar composition, as of carbonate of lime, or even elements, as carbon and sulphur, crystallizing under two or more different fundamental forms (*dimorphism, polymorphism*); or, we may have minerals of different but related chemical composition assuming identical or similar forms (*isomorphism, homœomorphism*); or, finally, we may have a mineral assuming the form of another mineral of essentially different chemical composition (*pseudomorphism*). As the molecular arrangement known as crystalline structure is thus intimately controlled by the laws that govern chemical combination, the explanation of the above mentioned apparent exceptions to law lies within the province of the chemical physicist. Thus, whilst the mathematician deals with the forms of crystals and their properties as geometrical solids, to the chemist and physicist must be assigned that part of *crystalology*, or the science of crystals, which treats of the laws and conditions that give rise to such forms. To the mathematical branch, is assigned the name *crystallography*, to the physical, *crystallogeny*. As crystalline form and chemical composition are the essential characteristics of mineral species, chemistry, physics, and solid geometry are the sciences upon which mineralogy is based. In turn, it is an essential subordinate of geology, necessarily throwing light upon the character and history of rocks. From a more general educational stand-point, mineralogy is important as making us acquainted with the results of the forces that are restricted in their action to inorganic matter, and enabling us to contrast them with the results of that combination of forces which we call vitality. The properties of minerals also throw light on physical problems by affording data for the discussion of questions affecting light, electricity, magnetism, etc.—In its applications to the arts, the value of mineralogy rests upon a chemical basis. It may thus be regarded, educationally, as supplementing chemistry, as complementary to geology, as of great technical importance to the practical chemist and as a necessary study to the metallurgist and mining engineer.—It will be at once apparent that the study of mineralogy, with whatever end in view, must be deferred to a late stage in advanced education. At the same time, it may be noted that minerals, regarded merely as the materials of which the earth's crust is composed, offer examples of so many physical properties that come under the cognizance of the senses, either unaided or aided by the simplest experiments, that they afford excellent material for the cultivation of the powers of observation in the lower stages of education. Minerals present these properties in the simplest conditions, uncomplicated, as in vegetable or animal materials, by the effects of vitality; and they are superior to artificial objects for objective teaching, because, if rightly used, they may be made to elucidate all that can be elucidated by the former, whilst they become, in addition, foundation stones upon which a more advanced and scientific study may be satisfactorily based. In this manner, they may be used to inculcate, in its most elementary form, a scientific method of research. Thus, by means of the physical characters of minerals, observation, accurate as far as our unaided senses can make it, and exactness of thought, and consequently of speech, may be cultivated in regard to *external form*, *internal structure* (including elementary notions of *crystalline structure* and *cleavage*), *color*, *diaphaneity*, *luster*, *hardness*, *tenacity*, *fracture*, etc. Observations, elementary it is true, but still of a fundamental character, regarding *specific gravity*, *solubility*, and *fusibility*, may be induced by simple experiments with the balance, the test-tube, and the blowpipe. Such knowledge, acquired from the common minerals around us, will undoubtedly be a valuable stepping-stone to further acquisitions. At a later stage, if practicable, instruction in the use of the blowpipe might be made to yield a further insight into simple chemical phenomena, and, if carried far enough, might be made an excellent starting-point for systematic scientific investigation by analysis.

In connection with mineralogy, attention should be given to *lithology*, or the science of mineral aggregates, or *rocks*. This subject presents many points of interest both from a scientific and an educational point of view ; and in its connections, on the one hand, with geology, and, on the other, with mineralogy, affords the materials for practical study as well as useful mental culture, thus constituting an element of both technical and liberal education. The works necessary to the general reader for reference on topics of mineralogy and lithology are few ; and those only are here named that are perfectly accessible.—See Dana, *A System of Mineralogy*; and *A Manual of Mineralogy* ; the former is the standard work of reference on minerals ; the latter is a brief compendium for beginners, but requiring adaptation to late advances; Nicol, *Elements of Mineralogy* ; Bristow, *Glossary of Mineralogy* ; Mitchell, *Mineralogy*, in Orr's *Circle of the Sciences*, useful in presenting the subject of crystallography. Elementary and concise information will be found in the standard manuals of geology. (See Geology.)

MINES, SCHOOL OF. See Scientific Schools.

MINISTRY OF PUBLIC INSTRUCTION. How far it is right or expedient for state governments to assume the control of the primary, secondary, and superior schools of a country, is a question which is still unsettled, receiving various answers in different countries. (See State and School.) This difference of views finds an expression in the way in which the different national governments have arranged the administration of those educational affairs of which they have taken charge. Some states have a special minister of public instruction who has charge only of the educational affairs of the country. Such states are, in Europe, France, Italy, Russia, Norway, Turkey; among the American states, only Nicaragua was reported (in the *Gotha Almanac* for 1876) as having a special minister of public instruction. In many other countries, one of the members of the state ministry bears the title of Minister of Public Instruction, but performs also the duties of some other department. Thus, in Prussia, Bavaria, Saxony, Würtemberg, Denmark, Greece, Sweden, Bolivia, Chili, and Costa Rica, the minister of education was, in 1875, also minister of public worship ; and, in some of these states, even a third ministerial department was connected with the office. In Spain, commerce, education, and public works ; in Guatemala, foreign affairs and education ; in San Salvador, the interior and education, were assigned to one member of the ministry. In none of the other states of Europe or America, do any of the members of the ministry bear the special title of minister of education, either exclusively or jointly with that of another ministerial department. In Belgium and in the Netherlands, there is a special bureau for educational affairs in the ministry of the interior ; and, in the same way, in the United States, a bureau of education, with a commissioner of education at its head, as a section of the department of the interior. In England, there is a committee of the council on education ; in Portugal a supreme study council ; and, in the new German Empire, an imperial school commission. Fuller information on this subject may be found in the special articles in this work on the different countries of the globe.

MINNESOTA, one of the north-western states of the American Union, formed a part of the territory of the same name, which was organized by Congress in 1849. The state of Minnesota was admitted into the Union in 1858, taking rank as the 19th, in the order of admission. Its area is 83,531 sq. m.; and its population, in 1870, was 439,706, including 438,257 whites, 759 colored persons, and 690 Indians.

Educational History. — The importance of general education was recognized in Minnesota at the commencement of its existence, the first constitution of the state making provision for a free public-school system and a state university. Every township containing not less than five families was constituted a school-district, in which school trustees were annually elected; and the majority of the voters had authority to levy a tax not exceeding $600; besides which a county tax was also sanctioned for school purposes. The general direction and supervision of the school system was assigned to a state superintendent. In 1860, there were 879 public schools, having 31,083 pupils, and 4 colleges having 366 students. The income of the public-school fund was $27,712, besides which $56,608 was raised by taxation for the support of common schools. In 1858, the first normal school was established, by an act of the legislature; and, in 1860, it was organized and opened at Winona. This school was suspended from March, 1862, to November, 1864, when it was re-opened in pursuance of a law passed in February of that year. A second state normal school was opened at Mankato, in 1868; and, the following year, $30,000 was appropriated by the legislature for a permanent building for its accomodation. A third normal school was opened at St. Cloud in 1869. A state normal board was constituted by law to have the supervision of these institutions, the state superintendent being made a member, *ex officio*. The preparatory department of the state university was opened in 1867, but the institution did not receive its charter till 1868. It was fully organized in 1870. After several years' experience of the system as originally established, the legislature, in 1873, subjected it to a thorough revision, prescribing the system mainly as it now exists. During the session of the legislature in that year, a bill was proposed providing for universal compulsory education and for the prevention of truancy; but it was not passed.—The state *school fund*, at that time, amounted to nearly 3 millions of dollars, realized from the sale of about one-eighth part of the land belonging to it.—Since 1870, the *state superintendents* have been Horace B. Wilson, who in that year succeeded Mark H. Dunnell, and served until 1875; and David Burt, the present incumbent (1876).

School System.—The supervision of the educational interests of the state is committed to a *superintendent of public instruction*, who is appointed by the governor for two years. His duties are similar to those of state superintendents generally; while his powers are greater from the fact that he is called upon to perform the functions usually intrusted in other states to state boards of education. He establishes normal training schools, convenes teachers' institutes, apportions the school funds among the several counties twice a year, and issues to teachers, upon examination by himself, or by a committee of teachers appointed by him, state certificates. This officer, the secretary of state, and the president of the university, constitute a board for the recommendation of text-books to be used in the common schools of the state. He is also a member and secretary, *ex officio*, of the state normal board, which has charge of the state normal schools.—*County commissioners* are also chosen, whose duty it is to appoint *county superintendents* for two years, at a salary of not less than $10, for each organized district. The duties of the latter are to examine teachers and grant certificates, to visit the schools in their respective counties once during each session, and each to make an annual report to the state superintendent. No one is eligible to the position of county superintendent who cannot obtain from the state superintendent a first-grade certificate. In each district, there is a director, a treasurer, and a clerk elected for three years. Their duties are the same as those of such officers in other states, and relate to the special and immediate wants of the schools under their charge. Independent districts may also be organized in any city, town, township, or village. In such cases, the government of these districts is intrusted to a board of six directors, who perform the duties usually belonging to the officers of school-districts. They also appoint three school examiners for the independent district, who examine applicants for the position of teacher. The school age is from 5 to 21 years.

Educational Condition. — The number of school-districts, in 1875, was 3,362; the number of school-houses, 2,975; the number of winter schools, 2,682; of summer schools, 2,643. The number of graded schools reported in that year was 222. The receipts for the support of the schools, were derived from the following sources:

Balance from previous year..	$231,089.98	
Special tax collected.........	659,427.60	
Apportioned by county auditor	551,837.17	
Sale of bonds.................	48,870.51	
Other sources................	84,856.34	
Total......		$1,576,081.60

The expenditures were as follows:

For teachers' wages.........	$702,662.66	
Furnishing and supplies......	57,568.92	
Repairing houses and grounds	54,206.98	
Purchasing sites and building houses....................	187,667.74	
Rent of sites and rooms......	3,158.64	
Payment of district bonds....	151,567.79	
For other purposes...........	132.796.30	
Total......		$1,289,629.03

The other important items of the *school statistics*, for 1875, are the following:

Pupils enrolled		107,044
Average attendance in summer		32,660
" " " winter...............		38,632
" " mean, for the year......		35,646
Number of teachers in ungraded schools:		
winter, males......	1,252	
females.....	1,147	
Total....		2,399
summer, males......	352	
females	1,949	
Total....		2,301

Number of teachers in graded schools:
males...... 120
females 444
Total.... 564
Number of different teachers employed:
males........1,372
females.....1,591
Total............2,963

Normal Instruction.—The normal schools of the state are three in number, located at Winona, Mankato, and St. Cloud. In that at Winona, the course of study embraces the English language, mathematics, physical and natural sciences, political economy, vocal music, and the theory and practice of teaching. The number of pupils enrolled in the normal department was (in 1875), males, 75; females, 226. The number enrolled in the model classes was, males, 105; females, 93; total enrollment, 499; the number in actual attendance in the normal department, 220. The faculty consists of a principal and ten assistants. The class of graduates of May, 1875, numbered 18; the whole number of graduates, since its organization, was 227.—The second state normal school is at Mankato. It is divided into a normal and a model department, and has a faculty of one principal and five professors or assistants. Both sexes are admitted. Its course of study is similar to that pursued in the normal school at Winona. The number of pupils enrolled, in 1875, was, in the normal department, males, 63; females, 150; in the model department, males, 30; females, 16. The average attendance in the normal department was 59; in the model department, 20. There were 11 graduates during the year.—The normal school at St. Cloud is the youngest of the three state institutions, having been established in 1869. Its organization and course of study are the same as those of the two older schools at Mankato and Winona. It is open to both sexes, and has a faculty consisting of a principal and six instructors. The enrollment was as follows: in the normal department, males, 50; females, 124; in the model department, males, 16; females, 32; average number in the normal department, males, 28; females, 64; average in model department, males, 10; females, 15. In addition to the privileges afforded by these three institutions, special instruction, to those desiring to teach in the public schools, is given in several of the high schools of the state. A large number of teachers of both sexes is supplied annually from this source.—*Teachers' institutes* are convened by the superintendent of public instruction, and are presided over by the superintendent of the county in which they are held. The effort made by the normal board to induce teachers and pupils in the normal schools to attend the annual institutes, and take part in the proceedings, has been successful. Eleven institutes were convened in 1875, the exercises in which were conducted largely by the teachers and pupils of the schools referred to; and the increased interest manifested, and the good feeling produced by bringing together the county teachers and those of the normal schools, are thought to be full of promise.

Secondary Instruction.—The number of high schools in the state is not reported. They are confined principally to the cities and large towns, many of the 222 graded schools having high-school courses attached. Recommendations have been made that the high schools be provided with a uniform course of study so as to constitute them stepping-stones to the state university, as in some other states; but decided action in this regard has not yet been taken. Many private schools exist in various parts of the state, which were reported, in 1875, as employing 145 professors and teachers, and affording instruction to 5,447 pupils. The Baldwin School, the preparatory department of Macalister College, was incorporated in 1853. Its curriculum is reported as substantially the same as that of Phillips Academy, in Massachusetts. The St. Croix Valley Academy, at Afton, received its charter in 1867; it is supposed to be the first regularly incorporated academy in the state. This institution has fitted a large number of teachers, who are satisfactorily employed in the district schools. Among the most important private institutions for secondary instruction, are Taylor's Select Graded School, at St. Paul, organized in 1674; the Minneapolis Business College, and the St. Paul Business College, the latter established in 1865, said to be the oldest and the largest institution of the kind in this part of the Northwest. The number of teachers, in 1875, was 6; lecturers, 3; students, 209.

Denominational and Parochial Schools.—The chief institutions of this character, according to the report of 1875, are the Schools of the Episcopal Church, at Faribault, including Shattuck School, a collegiate and business school for boys, which has a military organization, under the care of an experienced officer of the U. S. Army; and St. Mary's Hall, now in its eleventh year, established to provide a Christian home for young ladies, with opportunities for the highest mental culture. The Seabury Divinity College is connected with this group of institutions; also a cathedral, which cost $50,000, in which the students meet for public worship. Besides these, there is Wesleyan Seminary, at Wasioja, under the control of the Minnesota conference of the Wesleyan Methodists, which in 1875, had 98 students; and St. John's Seminary, near St. Joseph, Stearns Co., which is conducted by the Benedictine Fathers, and provides five courses of study: an elementary, a scientific, a commercial, a a classical, and an ecclesiastical course. (See below.)

Superior Instruction. — The University of Minnesota (q. v.), at Minneapolis, is the only institution of this grade controlled by the state. The following table includes all the institutions for superior instruction:

NAME	Location	When founded	Denomination
Carleton College..........	Northfield	1866	Cong.
Hamline University......	Red Wing	1854	M. Epis.
Macalister College.......	Minneapolis	1874	Presb.
St. John's Seminary......	St. Joseph	1857	R. C.
University of Minnesota..	Minneapolis	1870	Non-sect.

Professional and Scientific Instruction.—The Seabury Divinity College, Episcopalian, and St. John's Seminary, Roman Catholic, already referred to as institutions for superior instruction, have full courses in theology; and besides these, there is Augsburg Seminary, at Minneapolis, under Evangelical Lutheran control. Scientific instruction, in several grades and departments, is afforded by the State University (q. v.).

Special Instruction.—The Minnesota Institution for the Education of the Deaf and Dumb, and the Blind, located at Faribault, was opened in 1863, for residents of the state, between the ages of 10 and 25 years. The course of study embraces all the ordinary branches, with the special teaching of industrial pursuits. During the year 1875, there were 109 deaf-mutes and 21 blind pupils in the institution.

The only *educational journal* published in the state was *The Minnesota Teacher and Journal of Education*, which, in June, 1875, was consolidated with *The Chicago Teacher* and published at Chicago, under the title of *The Western Journal of Education.*

MINNESOTA, University of, at Minneapolis, Minn., was established upon grants of land by Congress for the endowment of a university and of a college of agriculture and the mechanic arts, amounting, in all, to 202,000 acres. The first act for its organization was passed by the territorial legislature in 1851. The present charter was granted in 1868, and amended in 1872. A preparatory school was opened in 1867; and, in 1869, the first college class was organized. Under the organic law, the board of regents are authorized to establish any desired number of departments or colleges, the following, however, being specified: "A department of elementary instruction; a college of science, literature, and the arts; a college of agriculture; a college of mechanic arts; a college or department of medicine; a college or department of law." The colleges of law and medicine have not yet been organized. The department of elementary instruction, otherwise designated, by virtue of a by-law of the board of regents, the "collegiate department," is introductory to the permanent colleges of the university. It includes, together with the work of the freshman and sophomore classes of the ordinary college courses, the preparatory department. The colleges provide for the junior and senior years and for post-graduate courses. The first preparatory year has been dropped; and a rule has been adopted excluding from the remaining preparatory classes all students who can obtain the same instruction in their local high schools. The collegiate department offers three courses of study, called classical, scientific, and modern. The college of science, literature, and the arts presents, likewise, three courses of study: a course in arts; a course in science; and a course in literature. The college of agriculture offers two courses: (1) an advanced or university course, based on the scientific course of the collegiate department, leading to the degree of Bachelor of Agriculture; (2) an elementary course, coinciding, to a considerable extent, with the scientific course of the collegiate department. The college of mechanic arts offers three advanced or university courses, leading to appropriate baccalaureate degrees: a course in civil engineering; a course in mechanical engineering; a course in architecture. These courses are based on the scientific course of the collegiate department. Tuition is free, the institution being supported by the annual income of its endowment, amounting, in 1875, to $14,000, and an annual appropriation of $19,000 from the state. The university grounds comprise about 25 acres, well wooded with native trees, and contain two fine buildings. There is also an experimental farm. The library contains nearly 10,000 bound volumes. The general museum comprises the collections of the geological and natural history survey of the state (carried on by the professors of the university), augmented by purchases and donations. The chemical and physical apparatus is valuable. Both sexes are admitted. In 1875—6, there were 16 instructors and 267 students (196 males, and 71 females), of whom 118 were of the college grade; 111, preparatory; and 39, special. William W. Folwell, M.A., has been the president of the university since its organization.

MISCHIEVOUSNESS, as applied to the disposition of a child, or school pupil, is the occasional transgression of an established rule in a playful spirit, but without a malicious intention. This disposition is usually the result of the union of humor, or love of fun, with sound bodily health. The exuberance of spirits thus produced generally finds vent in actions which are denominated mischievous. This spirit is so widely different from the willful breaking of rules with an evil intent, that the easy suppression of a continued exhibition of it rests entirely with the teacher; the good nature with which the mischievous act is accompanied generally causing the perpetrator to desist on a slight warning. To bring the mischievous spirit under speedy control, two qualities only are necessary in the teacher:—quick discernment of its real nature, and tact in correcting it. The want of these sometimes leads to needless irritation on both sides, and may end disastrously to the teacher's influence, and, through that, to the discipline of the school. If, on the other hand, the good humor of the transgressor is met by a similar feeling on the part of the teacher, the task of correction is usually easy, and causes no offense; while, in the end, it secures a respectful obedience on the part of the pupil. If, however, the mischievous disposition is not corrected in this way, it may lead to vicious habits, which will tend to undermine, or permanently deprave the moral character.

MISSISSIPPI, one of the southern states of the American Union, formed at first a part of the Mississippi Territory, which was organized by act of Congress, April 7., 1798, and included nearly all the territory now comprised within the states of Mississippi and Alabama. This was enlarged by successive additions, in 1802 and 1812; and, in 1817, Alabama Territory was formed from the eastern portion of it, and in the same year Mississippi was admitted into the Union as a state. Its area is 47,156 sq. m.; and its population, in 1870, was 827,922, of whom 382,896 were whites; 444,201, colored persons; 809, Indians; and 16, Chinese.

Educational History.—The constitution of the state. at the time of its admission into the Union, recognized the importance of encouraging education as the means of promoting "liberty and the happiness of mankind;" but no effective or properly organized system of public schools was established in the state. In 1840, the census returns showed that there were 382 common and primary schools, with 8,263 pupils, and 71 academies. with 2,553 students. There were also several colleges in the state, having, in the aggregate, 250 students. In 1850, the number of public schools had increased to 762; and the number of academies, to 189. In 1860, there were reported 1,116 public schools, having 30,970 pupils, and an income of $385,679. The number of academies and other schools was 169, with 7,974 pupils; and there were 13 colleges, with 856 students. The state constitution of 1868 recognized the need of providing the means of popular education, and hence made it the duty of the legislature to establish "a uniform system of free public schools by taxation, or otherwise, for all children between the ages of 5 and 21 years," and also, as soon as practicable, "to establish schools of a higher grade." The same constitution also required the election of a "superintendent of public education," to hold office for four years, and also that there should be a "board of education," consisting of the secretary of state, the attorney-general, and the state superintendent; and that there should be a school superintendent in each county, and that school should be kept in each district for at least four months in each year. It also provided for a school fund from the proceeds of lands belonging to the state, granted by the United States, and the lands known as *swamp lands*, and authorized a poll-tax not exceeding $2 a head, in aid of the school fund. It prescribed the establishment of an agricultural college, and that "no religious sect is ever to control any part of the school or university funds of the state". In pursuance of these constitutional requirements, the legislature, at its session of June, 1870, passed a school law, organizing the present school system, except as amended in some particulars by the revised code of 1871.—The first state superintendent under this law was H. R. Pease, who served till 1874; his successors being T. W. Cardozo, from 1874 to 1876; T. S. Gathright, from Jan. to Sept., 1876; and Rev. Jos. Bardwell, now in office (1876).

School System.—The general supervision and control of the public schools of the state are committed to a *state board of education*, consisting of the secretary of state, the attorney-general, and the superindendent of public education. This board has charge of all property and funds devoted to school purposes, the income of which they pay to the local authorities. They make an annual report to the superintendent of public education, which is incorporated in his report to the legislature. The immediate supervision and control of the schools are entrusted to the *superintendent of public education*, who is elected every four years. There is, in each county, a *county superintendent*, appointed by the board of education, and confirmed by the senate, for two years. The duties of these officers are similar to those of county superintendents in other states. Each county constitutes a school-district, which is governed by a board of *school directors*, elected by the parents or guardians of the children attending school. The number of schools in each county must be one or more, and the school session not less than four months. Each city of 3,000 inhabitants, also, forms a school-district, governed, as in the case of the counties, by six school directors chosen by the resident voters. Each county is required to furnish a free scholarship to each of the universities of the state; and to each normal school, as many students as it has representatives in the lower house of the legislature. It is provided by law that "the Bible shall not be excluded from the schools of the state". The school age is from 5 to 21 years.

Educational Condition. — The number of schools, in 1875, was 3,434,—first grade, 764; second grade, 2,670; high schools, 8; private schools, 606. The support of the schools was derived from the following sources:

State four-mill tax	$489,443.83
City and county taxes	354,872.40
Chickasaw fund	63,466.63
Collected on loans of school funds	20,000.00
Sale and rental of school lands	50,000.00
Aid from Peabody Fund	9,500.00
Total	$987,282.86
Expenditures:	
For teachers' salaries	$857,950.44
Salaries of county superintendents	48,650.00
Miscellaneous expenditures	80,000.00
Total	$986,600.44

The other items of *school statistics* are the following;

Number of children of school age:		
Whites,	141,514	
Colored,	176,945	
Total		318,459
Number of pupils enrolled		168,217
Average monthly enrollment		133,330
Average daily attendance		106,894
Number of teachers		4,968
Average monthly wages of teachers		$55.47

Normal Instruction.—There are two normal schools in the state, one at Holly Springs, the other at Tougaloo. The first was opened in 1870, and three years after, graduated 3 pupils. The limited appropriation made for its support, has impaired its efficiency by rendering it difficult to secure the services of competent persons as instructors. The normal school at Tougaloo is a part of the Tougaloo University, to which the American Missionary Association contributed $15,000, and the state $10,000. The faculty of the school consists of a principal, preceptress, and five teachers. Manual labor is a feature of the curriculum, each student being required to occupy himself one hour daily in this way Instruction is given principally in the English branches and mathematics. Facilities are also afforded for the study of vocal and instrumental music. There is a reference library of 1,000 volumes, and philosophical apparatus.

Secondary Instruction.—The reports received from high schools and academies have been so few in number as to give very little ground on which to base an estimate of the work that is being done in this grade of instruction.

Superior Instruction. — The chief institutions of this grade are enumerated in the following table:

NAME	Location	When founded	Religious denomination
Mississippi College...	Clinton	1830	Bap.
Pass Christian College	Pass Christian	1866	R. C.
Shaw University.....	Holly Springs	1868	Meth.
Tougaloo University..	Tougaloo	1869	Union.
Univ. of Mississippi..	Oxford	1844	Non-sect.

The report, for 1874, of the U. S. Bureau of Education mentions 7 colleges for the superior instruction of women, of which 6 were authorized to confer degrees. These colleges are located at Brookhaven (Whitworth), Clinton (Central Institute), Columbus (Female Institute), Holly Springs (Franklin), Meridian, Oxford (Union), and Pontotoc (Chickasaw).

Professional and Scientific Instruction.—Alcorn University, at Rodney, was created by act of the legislature in 1871, and occupies the site of the institution formerly known as Oakland College, the oldest academic institution in the state. To the university was granted three-fifths of the proceeds of the sale of the agricultural college land-scrip, amounting to $113,400, besides a legislative appropriation of $50,000 for ten years. It is open to students of either race. It has an agricultural department, with a farm of 275 acres. Its philosophical and chemical apparatus is very elaborate and complete. Means for scientific instruction is also afforded by the College of Agriculture and Mechanic Arts, a department of the University of Mississippi. This institution has also a law department; and there is a theological class in Tougaloo University.

Special Instruction.—The Mississippi Institute for the Blind, at Jackson, is the only institution of this character in the state. It was founded in 1852, and is supported by state appropriations.

MISSISSIPPI, University of, at Oxford, Miss., was chartered in 1844 and opened in 1848, receiving the proceeds of the grant of land by Congress to the state for the support of a seminary of learning. In 1871, it was awarded by the legislature two-fifths of the congressional land grant for the establishment of a college of agriculture and the mechanic arts. The institution possesses complete chemical, philosophical, and astronomical apparatus; a cabinet of shells and mineralogical specimens; collections of fossils, soils, and other geological apparatus; besides instruments to illustrate mathematics and engineering, and a large farm. The library contains more than 6,000 volumes. The invested resources of the university do not exceed $200,000. The income, in 1876, from endowment and state appropriations was $30,000. The plan of instruction embraces three general departments; namely, (1) preparatory education (including a commercial course); (2) science, literature, and the arts; (3) professional education. The second department includes five distinct courses of study, three of which are undergraduate parallel courses, two being post-graduate courses. The undergraduate courses are known as (1) The Course for Bachelor of Arts (4 yrs.); (2) The Course for Bachelor of Science (4 yrs.); (3) The Course for Bachelor of Philosophy (3 yrs.). A student has free choice of these courses, but the studies prescribed for each course are all compulsory for that course. The post-graduate courses are for the degrees of Master of Arts and Doctor of Philosophy. Under the third general department are embraced three professional schools; namely, (1) law; (2) medicine and surgery (not yet organized); (3) agriculture and the mechanic arts, in which the regular course is for four years, leading to the degree of Bachelor of Scientific Agriculture (B. S. A.). The cost of tuition in the first general departments is $25 a year; in the law school, $50 a year. In 1875—6, there were 13 instructors and 131 students. The presiding officers have been as follows: George F. Holmes, LL. D. (president), 1848—9; the Rev. Augustus B. Longstreet, D. D., LL. D. (president), 1849—56; the Rev. Frederick A. P.Barnard, D. D., LL. D., 1856—9 as president, and 1859—61 as chancellor; the Rev. John N. Waddel, D. D., LL. D., (chancellor) 1865—74; and Gen. Alexander P. Stewart, the present chancellor (1876), appointed in 1874.

MISSISSIPPI COLLEGE, at Clinton, Miss., under Baptist control, was chartered in 1830. It has libraries containing 3,000 volumes, and extensive apparatus and cabinets. Its productive funds amount to $50,000. The regular tuition fee is $25 a year. The college consists of a preparatory department, and the following six schools: (1) mental and moral science, (2) Greek, (3) Latin, (4) mathematics, (5) natural sciences, and (6) English. Any student completing the six schools is entitled to the degree of A. B.; those completing the schools of moral science, mathematics, natural sciences, and the English, to the degree of B. S.: those completing the schools of moral science, Greek, Latin, and English, to the degree of B. L. In 1873—4, there were 7 instructors and 163 students. The Rev. W. S. Webb, A. M., is the president (1876).

MISSOURI, one of the western states of the American Union, was originally a part of the Louisiana purchase of 1803, and on the admission of the state of Louisiana, in 1812, formed part of the Missouri Territory. It was admitted into the Union as a state, with its present limits, in 1821. Its area is 65,350 sq. m.; and its population, in 1870, was 1,721,295, of whom 1,603,146 were whites, 118,071 colored persons, 75 Indians, and 3 Chinese.

Educational History.—This subject will be considered under three heads: (I) The establishing of schools; (II) The mode of maintaining them; (III) The mode of supervising them.

I. The first recorded school established in the present state of Missouri, was an academy in the town of Geneviève. There are no means of knowing when it was established; but, in 1808, it was incorporated under a board of trustees, the act of incorporation requiring, "that an institution for the education of females shall be established by the trustees as soon as the funds of the academy will admit of it; and that the trustees shall cause, at all times, the French and English languages to be taught in the said academy." In 1812, Congress, in erecting the territory of Missouri, made general provision for the cause of education, which took practical shape shortly after in special grants of town lots and other lands to specially named communities, or school corporations; but the territorial government made no effort to establish a general system of public schools. It contented itself with extending aid, encouragement, and protection to all communities showing enterprise in this respect; but further than this it could not prudently go, owing to the numerical weakness of the population and its widely scattered character. An act was approved January 22., 1817, establishing "a lottery for the benefit of Potosi Academy," which institution consisted of two houses, built and in part furnished by the inhabitants of Washington county at Mine à Burton. On the 30th of January, in the same year, an act to incorporate trustees of this academy was approved. The board was to consist of seven members. Two classes—junior and senior—were established, the instruction given in the former being preparatory, that in the latter, "the English language, with such other languages and sciences as were usually taught in seminaries of learning." The name of the school had previously been Mine à Burton Academy. This is the first school mentioned in the public records between 1812 and 1820. On the same day (January 30., 1817), an act was approved authorizing the commissioners of public buildings, in the town of Jackson, Cape Girardeau Co., to convey to five persons, named in the act, four acres of land on which to erect a school-house. They were permitted to dispose of a portion of this land, for the purpose of creating a building fund. On the same day, an act to incorporate a board of trustees for the superintendence of schools in the town (now city) of St. Louis was approved. The board was limited to thirteen members, and when incorporated, consisted of William Clark, William C. Carr, Thomas H. Benton, Bernard Pratte, Auguste Chouteau, Alexander McNair, and John P. Cabanne—names ever after prominent in, and intimately associated with, the development and history of St. Louis and the state. They were authorized to take and hold all real and personal property given to the schools by individuals or Congress, and to dispose of the same to advantage, by lease or sale. The establishment of these schools embraces the whole educational history of the eight years of territorial existence, so far as is indicated by the public records. Five years elapsed, after the formation of the state government, before any effort was made to establish a general and uniform system of public schools. During this period, the three academies already mentioned were re-incorporated, with slight modifications and improvements of the acts of incorporation, and several new ones were established. This closed the first period of the state's educational history; since, thereafter, the legislature pursued the policy of encouraging education by the establishment of a general system, and by the enactment of general instead of special laws. In the act of Congress, March, 1820, authorizing the people of Missouri Territory to form a constitution and state government, propositions were offered providing for the establishment and support of common schools, which were accepted by the state and incorporated into the constitution, the first section of the sixth article of which reads, "Schools and the means of education shall forever be encouraged in this state; and the general assembly shall take measures to preserve from waste or damage such lands as have been, or hereafter may be, granted by the United States, for the use of schools within each township in the state, and shall apply the funds which may arise from such lands in strict conformity to the object of the grant; one school or more shall be established in each township as soon as practicable and necessary, where the poor shall be taught gratis." Section 2d of the same article provided that the assembly should take measures for the improvement of such land as had been already, or might be thereafter, granted by the United States, the funds accruing from the rent or lease of which, together with all other funds given for the same purpose, were to constitute a permanent fund for the support of "a university for the promotion of literature and the arts and sciences." The state was admitted into the Union upon the terms of this constitution; and, hence, a general public-school system, of a high or a low grade, is one of her permanent institutions. The statutory provisions in relation to school lands and public education have been very numerous, being suggested from time to time by the condition of the rapidly growing state, and by the needs of its increasing population. In 1820, the legislature directed the several county courts to appoint five commissioners of school lands, to exercise a general supervision over the same, to rent or lease them, and to invest the proceeds, but without power to sell. In 1822, the act of 1820 was amended so as to require the appointment by the courts of two commissioners in each township, whose duty it should be to erect "a sufficient school-house for the benefit of education," whenever the funds derived from the renting or leasing of the school lands were sufficient to justify it. In 1824, an act was passed by which each township was constituted a school-district, and a board of five trustees was appointed in each, who were empowered to "build or procure school-houses, and repair the same," "to appoint teachers and visitors of schools, and to make rules for the government of the schools." All subsequent legislation in regard to the common schools consists of modifications of the law of 1824. In 1835, there was a general revision of the statutes. Among them was a revised school law, reported by a committee of three, appointed by the governor, "to form a system of common primary-school education as nearly uniform as possible throughout the state." By this, each congressional township constituted a school-district, in which three trustees were elected annually, who were empowered to build school-houses, employ teachers, and maintain schools six months in the year, or throughout the year, if a majority of the patrons petitioned therefor. The constitution adopted in 1865 contains still further provisions for the establishment of free schools for all persons in the state between the ages of 5 and 21, and permits the establishment of separate schools for children of African descent, requiring the distribution of all public-school moneys (not funds) in proportion to the number of children, without regard to color. Section 4. of the state constitution requires the legislature to establish and maintain a state university with departments for teaching "agriculture and natural science," as soon as the public-school fund will permit. The school law was still further amended, but not materially, in 1870, and again by the new constitution, adopted in convention, in 1875.

II. The earliest record of measures taken for the maintenance of schools in Missouri extends back to the school incorporated in St. Geneviève, in 1808. The first means employed for creating a school revenue was by grants of land, in 1812, already referred to. In 1817, the income of the Mine à Burton Academy was increased by the election of seven trustees, each of whom was required to pay $10 as a necessary qualification for the office, and by a fee of $5 previously paid by each elector voting for said trustees. When the people of Missouri applied, in 1820, for admission into the Union, Congress, for the sake of providing for the establishment of schools, submitted the following proposition: "that the section numbered 16 in every township, and when such section has been sold or otherwise disposed of, other lands equivalent thereto, and as contiguous as may be, shall be granted to the state for the use of the inhabitants of such township, for the use of schools"; that "thirty-six sections, or one entire township, which shall be designated by the President of the United States, together with the other lands heretofore reserved for that purpose, shall be reserved for the use of a seminary of learning, and vested in the legislature of said state, to be appropriated solely to the use of such seminary by the said legislature." This proposition was accepted, and embodied in the state constitution; and the same year five commissioners were appointed to rent or lease the school lands, and securely invest the proceeds. In 1824, similar measures were adopted, three commissioners being appointed in each township. They were authorized to assume control of and manage the school lands of the township, to "loan moneys," and "lease real estate." They could, also, on petition of two-thirds of the householders, levy and collect a special tax for the maintenance of the schools, or of those sending pupils to them, when the public funds were insufficient. In 1831, an act was passed authorizing the sale of the saline lands given by Congress to the state. In the same year, the sale of the 16th section was directed by law, by an agent appointed by the county court of each county, when three-fourths of the inhabitants of any township petitioned for such sale. The interest of the money thus derived was to be used for school purposes. The sale of the "seminary lands"— two entire townships—was, in 1832, directed by the legislature for not less than $2 per acre It is estimated that $400,000 was lost by this sale alone; and that the losses by injudicious sales of other lands belonging to the state, and by insecure investments of the proceeds, have amounted to a sum sufficient to have supported the public schools of the state forever, exclusive of any local taxation. The revised school law of 1835 empowered township trustees to levy a special tax for the purpose of keeping the schools open as long as a majority of the patrons desired, whenever two-thirds of the voters of the school-districts demanded it. These trustees, also, were required to subscribe $1 each to the school fund. The state constitution, adopted in 1865, established a permanent school fund, and provided for the annual distribution of the income of the same, together with so much of the annual revenues as might be necessary to maintain free schools three months in the year. These funds were to be invested in bonds of the United States. In case the public-school funds should prove insufficient to sustain free schools at least four months every year, power is given to increase the school revenue by local taxation. The general assembly, also, was required to reduce all property in the state held for school purposes into the public school fund, and in the annual distribution to equalize apportionments by a consideration of the amount of county or city funds appropriated. The constitution, adopted in 1876, does not materially alter the provisions of that of 1865; like that, it perpetuates the public-school fund, setting apart annually 25 per cent of the state revenue, exclusive of the interest and sinking fund, for the support of the schools. It places in the county school fund the net proceeds of estrays, fines, forfeitures, and penalties; while the constitution of 1865 placed this in the state school fund. All moneys paid for exemption from military duty, also, are placed in the county fund. The article on Revenue and Taxation in the new constitution limits taxation for school purposes to 40 cents on the $100, unless increased by a majority vote of the tax-payers. By such vote, it may be increased, in cities and towns, to $1, and, in country districts, to 65 cents. For building purposes, it can be still further increased.

The permanent public-school funds of the state are the following:

The *State Fund*, consisting of U. S. Reg'd 6 per cent bonds, U. S. 6 per cent coupon bonds, Mo. 6 per cent coupon bonds, and Mo. 6 per cent certificates of indebtedness ($900,000)	$2,634,354.00
Seminary Fund (University), consisting of U. S. Reg'd, and coupon 6 per cent bonds	$108,700.00
Township Funds	$2,079,182.96
County Funds (including swamp land)	$2,257,716.83

Township and county funds under the control of the county courts, may be invested in state or U. S. bonds, or loaned upon personal and real estate. It is an almost invariable custom to loan them. The proceeds, like the proceeds of the state fund, and 25 per cent of the revenue, are annually distributed to the districts in which schools were taught the previous year for not less than three months, in the ratio of school population.

III. For many years, the method of supervising the few schools and academies in the territory was by local trustees, specifically named for the purpose, or elected by the people. Their power, also, was very great, comprehending almost all that is now divided among several grades of officers. Thus, the board appointed, in 1817, to supervise the schools of St. Louis, was authorized not only to establish schools, but to take and hold all real and personal property given to the schools by individuals or by Congress, and to dispose of the same to advantage by lease or sale. In 1820, the division of duties first appears, county commissioners being then appointed to manage the school lands; but, in 1824, the boards of trustees are again required to assume control of the school lands, in addition to their other duties, among which duties was that of appointing visitors to the schools. These visitors were nine in number in each district. They were required to visit the schools once in three months, to examine teachers, and to issue certificates of qualification, without which no one was allowed to teach, and to exercise a general supervisory power. In 1835, the revised school law placed the supervision of the schools in the hands of three trustees annually elected for the purpose in each school-district, who reported to the county courts, the latter reporting biennially to the secretary of state. The first system of general supervision of the schools was inaugurated at this time, the law constituting the governor, the auditor, the treasurer, and the attorney-general, a state board of education. In 1853, an act was passed, requiring the election of a state superintendent. The constitution adopted in 1865, created a state board of education, to consist of the secretary of state, the attorney-general, and the superintendent of public schools, the latter being chairman of the board and eligible for four years. In 1874, the school law was again changed, the general supervision of the schools remaining with the state board, and the immediate supervision with district directors. The *state superintendents* have been as follows: (1) Peter G. Glover (of "Common Schools"), elected by the legislature in 1839, for two years. After his term the office was abolished, and its duties devolved on the secretary of state. In 1853, the office was re-established, and (2) John W. Henry (of "Public Instruction") was appointed by the governor to serve until after the election, in 1854, when (3) E. C. Davis was elected. He was succeded by (4) William B. Starke, elected in 1856, and re-elected in 1858 and 1860. From December, 1861, to March, 1863, the duties of the office were discharged by the secretary of the state, who, at the latter date, became, by law, superintendent, *ex officio*. In 1865, the office was restored, and (5) James L. Robinson was appointed by the governor superintendent of public schools. The succeeding incumbents have been: (6) T. A. Parker, elected in 1866 for four years (office then constitutional); (7) Ira Divoll, elected in 1870, died in 1871; (8) John Monteith, appointed to fill the vacancy; and (9) Richard D. Shannon, elected in November, 1874, and still in office (1876).

School System.— The general control of the educational interests of the state is lodged with a *state board of education*, which consists of the secretary of state, the attorney-general, and the state superintendent. In addition to a supervisory power, it is charged with the duty of investing all moneys received by the state for educational purposes. The *state superintendent* is elected for four years, and is chairman of the state board. He has general jurisdiction over the whole school system, with power to compel all school officers to furnish him with any statistics or information respecting their trusts he may deem proper. In addition to the duties usually performed by this officer, he is required to establish colored schools whenever the proper officers fail to do so. He makes an annual report to the legislature, or to the governor when the legislature is not in session. *County commissioners* — one in each county— are elected biennially, in April. Their duties are to examine teachers, grant certificates (graded, limited to one county, and valid for one or two years), and exercise a general supervision over the schools of the county. *District directors*, three in number, are elected for three years, one being chosen annually. They are required to examine into, and report upon, the condition of the schools, to purchase the necessary apparatus and furniture, to employ teachers, and to make all regulations requisite for the proper organization and management of the schools. They may levy a tax, when necessary for the maintenance of the schools, at a rate not exceeding one per cent of the taxable property of the district, for teachers' salaries; and not exceeding the same rate, for buildings and incidental purposes; but no tax can be levied for the continuance of the schools for more than four months in the year, except by a majority vote of the district at the annual meeting. The school system is divided into departments as follows: (1) the university, supported by a distinct fund and legislative appropriations; (2) normal schools, supported by permanent legislative appropriations of $10,000 each; (3) schools in "cities, towns, and villages," under the general law of 1870 for their organization. These schools have boards of education, with special privileges, each consisting of six members, two of whom are elected annually in September. The schools must be taught not less than 30, nor more than 40, weeks each year; (4) schools in cities having special school charters, which charters confer almost unlimited powers in all matters pertaining to their school interests; (5) general district public schools; and (6) colored schools, specially provided for; those belonging to the classes marked above (3), (4), (5), and (6) being supported by the state public-school fund and local taxation. "Central schools" may be established by the union of two or more districts for that purpose. These are graded schools kept for six months, or longer, if the districts interested so vote. They are controlled by boards — composed of the presidents of the boards of these districts — and by the districts themselves, to about the same extent that the district schools are managed by their boards. The tax for the maintenance of the colored schools is levied on the taxable property of the townships in which the schools are located. To these schools, persons over 21 years of age are admitted. The school month consists of 4 weeks of 5 days each; and the school day, of 6 hours. The legal school age is from 5 to 21 years. A meeting of the presidents of the various boards of directors, with the county commissioners, is held at every county seat once in 4 years, to secure uniformity in text-books. Appropriations from any public fund in aid of sectarian instruction are strictly prohibited.

Educational Condition.—The estimated number of school-districts, in 1875, was 7,932; the number of public schools, for whites, 7,061; for colored persons, 326; the number of private schools, 661, in which there were enrolled 33,525 pupils. The support of the schools was derived from the following sources:

From public funds (state, county, and township)	$857,785	
From taxation	$2,155,810	
Total		$3,013,595
Expenditures.		
For salaries, buildings, rent, etc.		$1,638,353
School Statistics.		
Number of persons of school age (5—21):		
Whites	678,270	
Colored	41,916	
Total		720,186
Number enrolled in public schools:		
Whites	379,948	
Colored	14,832	
Total		394,780
Average daily attendance		192,904
Number of teachers, males	5,904	
" " females	3,747	
Total		9,651
The average monthly wages of teachers, males		$38.00
" " " " females		$29.50

Normal Instruction.—There are four normal schools under the control of the state, and one at St. Louis, the latter intended principally for supplying teachers to the schools of the city. This school has recently been made more useful by the addition of a model department. The course is for two years, and instruction is given, during the first year, in the higher branches, the second being devoted to review, with special reference to the methods of teaching. Pupils of the high school are admitted to the normal school without examination. In 1874—5, the total enrollment was 254. The Fruitland Normal Institute, at Jackson, was organized in 1864. It reported, in 1874, 3 resident and 2 non-resident instructors, 53 male, and 24 female students. Three years constitute the school course. The North Mo. State Normal School, at Kirksville, was organized for the purpose of fitting teachers for the country district schools. The qualifications for admission are those necessary to secure a teachers' certificate of the lowest grade. In 1875, the number of instructors was 9; number of students, 709; number of graduates, 72. The South Mo. State Normal School, at Warrensburg, provides three courses of study, — an elementary, an advanced, and a professional. Two terms, or twenty weeks, are necessary to complete the course of study. Some embarrassment has been occasioned to the institution from lack of funds. It reported, in 1875, 11 instructors, and 408 students. The South-east Mo. State Normal School, at Cape Girardeau, was opened in 1873, with 35 students. In 1875, it had 5 instructors and 164 students. Each of the state normal schools is under the care of a state board of regents. Lincoln Institute, at Jefferson City, was organized in 1866, for the instruction of colored teachers. It is supported by a permanent state appropriation of $5,000, and by private subscriptions. It is divided into a primary and a normal department, and, in 1874, had 6 instructors and 40 students. Its graduates, according to the report of the state superintendent, for 1875, are teaching colored schools in a large number of counties, and are giving general satisfaction.

Teachers' Institutes.—The practice of holding teachers' institutes was, in 1875, comparatively abandoned, the law not requiring them except in counties which employ the whole time of the commissioner, and there being only one (Jasper) in which this is the case. Probably not over 20 institutes were held during the year. Efforts, however, are to be made to increase the number and efficiency of the institutes.

Secondary Instruction.—The question of the support of high schools by the state has been raised in Missouri, as it was in Michigan, and Superintendent Monteith, in 1873, in discussing this question, expressed the opinion, that, though their existence is the logical result of the establishment of a public-school system and a state university, yet as the need of them is local, their establishment should rest with the local school boards, and their support be derived from local taxation. There are several business colleges, situated in various parts of the state, but chiefly in St. Louis, 8 of which, in 1874, reported to the U. S. Bureau of Education, 48 teachers and 6,077 pupils. Their courses of study range from three months to 4 years.

Superior Instruction. — The universities, colleges, and institutions for higher education are enumerated in the following table:

NAME	Location	When founded	Religious denomination
Central College.........	Fayette	1871	M. E. S.
Christian University...	Canton	1856	*Christian*
College of the Christian Brothers..............	St. Louis	1859	R. C.
Drury College..........	Springfield	1873	Cong.
Hannibal College.......	Hannibal	1868	M. E. S.
Lewis College	Glasgow	1865	M. Epis.
Lincoln College........	Greenwood	1870	M. Epis.
McGee College..........	Coll. Mound	1853	U. Presb.
St. Joseph College......	St. Joseph	1867	Cumb. Pr.
St. Louis University....	St. Louis	1832	R. C.
St. Paul's College.......	Palmyra	1844	Prot. Ep.
St. Vincent's College....	C. Girardeau	1844	R. C.
Washington University.	St. Louis	1857	Non-sect.
Westminster College...	Fulton	1852	Presb.
William Jewell College .	Liberty	1853	Bap.
Woodland College......	Independence	1869	*Christian*

Besides these institutions, there are 11 academies and colleges for the higher education of women, 9 of which, in 1874, reported 97 instructors and 1,136 students.

Professional and Scientific Instruction.— Many of the colleges and universities furnish opportunities for professional and scientific instruction, but special schools have been established for the same purpose in many places. Of these, the principal are the Vardeman School of Theology, at Liberty; the Kansas City College of physicians and surgeons; the Missouri Medical College, the St. Louis Medical College, the Homœopathic Medical College of Missouri, the Missouri Dental College, and the College of Pharmacy—the last five, at St. Louis.

Special Instruction.—The Missouri Asylum for the Education of the Deaf and Dumb was organized at Fulton, in 1851. It is supported by state appropriations, which have not been large enough, thus far, to admit of giving instruction in the trades—a prominent feature in several other institutions of the kind. Board and tuition for all deaf and dumb persons between the ages of 7 and 30 years are furnished free of cost, but it is estimated that only about one half the persons so afflicted in the state can be accommodated. There were 8 instructors, in 1874, and 153 pupils—75 males, and 78 females. Besides this, there is another institution (St. Bridget's Institute), founded in St. Louis, in 1860, for the same purpose. The Missouri Institution for the Education of the Blind was opened in St. Louis, in 1851. It receives from the state an annual appropriation of about $21,000. In addition to the branches of an ordinary education, instruction is given in music, and the pupils are taught some kind of industrial or mechanical occupation. A normal class has also been formed, for the purpose of fitting some of the more advanced pupils to teach in the public schools. There were, in 1874, 27 instructors and employés of all kinds, and 93 pupils.

Educational Journals. — There are several journals either wholly or partly educational published in the state, among which may be specially mentioned *The Western*, a monthly published at St. Louis, and now in its eleventh year; and the *American Journal of Education*, a monthly, also published at St. Louis, and at present in its ninth year. These journals are well conducted, and have exerted an important influence in advancing the cause of education in the state.

MISSOURI, University of the State of, at Columbia, Mo., was chartered in 1839, and organized in 1840, receiving the proceeds of the lands granted by Congress to the state for the support of a seminary of learning. In 1870, it was awarded the benefit of the congressional land grant for the establishment of a college of agriculture and the mechanic arts. During the civil war, the university was partially suspended; but after its close, it was re-organized, and it now consists (besides the preparatory department) of (I) the College proper, with courses in arts, science, letters, and philosophy, and of the following professional schools: (II) The Normal, or College of Instruction in Teaching, opened in 1868; (III) The Agricultural and Mechanical College, 1870; (IV) The School of Mines and Metallurgy (at Rolla), 1871; (V) The College of Law, 1872; (VI) The Medical College, 1873; (VII) The Department of Analytical and Applied Chemistry, 1873. Both sexes are admitted to all the departments. The university has appropriate buildings, all necessary apparatus, and an extensive farm. The libraries contain about 8,500 volumes. The income of the institution (from endowment and state appropriations) is $68,467 per annum. The charges to students who are residents of Missouri, cannot exceed $20 a year. The school of mines and metallurgy has extensive and valuable lands in the mining district in the south-eastern part of the state. In 1875—6, there were, in all the departments of the university, 29 instructors and 391 students. The presidents have been as follows: John H. Lathrop, LL. D., 1840—50; James Shannon, LL. D., 1850—56; W. W. Hudson, A. M., 1856—7; B. B. Minor 1858—60; and Daniel Read, LL. D., the present incumbent, appointed in 1866.

MNEMONICS. See MEMORY.

MODEL SCHOOLS. See NORMAL SCHOOLS.

MODERN LANGUAGES, in the literal and widest sense of the term, are the languages now in use, in contradistinction to those which were formerly spoken, but are now extinct. Taken in this sense, the term embraces the mother-tongue, in which the home education of the child is conducted, the national or ruling language of the country, which is the medium of instruction in the schools, and the living languages of foreign nations. It is the general tendency of the age, to make a thorough knowledge of the national language the center and the chief aim of all school instruction; though it has been demanded, from an educational point of view, that wherever the mother-tongue of a large portion of the inhabitants of a country is different from that of the national language, the claims of the mother-tongue should not be ignored. When the modern languages are spoken of as a branch of school instruction, they are, however, generally understood in the sense of the languages of foreign nations. The admission of modern foreign languages into a regular course of instruction is of comparatively recent date, and the credit of having first obtained this recognition belongs to the French language (q. v.). Until very recently, French has enjoyed, in this respect, an acknowledged superiority over any other language of the globe; and it is but recently that English and German have to any considerable extent begun to compete with it. At present, French, English, and German are studied all over the world, as the chief representatives of modern culture. The Italian language (q. v.) is learned by many of the students of fine arts and of music in preference to any of the three principal modern languages; but more in courses of private instruction than in schools. It is, however, chiefly in the secondary schools, that the study of modern languages has now been generally admitted. There are but few colleges, gymnasia, lyceums, Latin schools, real schools, academies, seminaries, or boarding-schools which do not provide for instruction in one or two of the modern languages. The adoption of more than two modern languages, in a regular course of studies, is met with in only a few cases, and finds but few advocates. Scientific and real schools (or departments), especially the latter, cultivate the modern languages, frequently to the exclusion of the classical; but even classical schools have now quite generally opened their gates to the at first unwelcome rival.—In the highest institutions of learning, such as the European universities, the modern languages are still far from occupying a position of equality with the classical, or even some of the oriental languages. In England, Oxford and Cambridge had, in 1875, professorships of Latin, Greek, Hebrew, Arabic, and Sanskrit; Oxford, also of Anglo-Saxon and comparative philology, but not of either French or German. In the 21 universities of Germany (including the academy of Münster), classical philologists had, in 1874, the opportunity to attend 134 courses of lectures, which occupied an aggregate of 400 hours weekly. Besides, the exercises in the philological seminaries occupied 128 hours, making a total of 528 hours. Of the professors teaching the classical languages, 64 were ordinary, 16 extraordinary, besides 11 *privat-docenten* (lecturers); total 91. To the oriental languages, 330 hours were devoted; but to French and English, only 172 hours. The German governments show, however, a readiness to reconsider the claim of modern languages to a better representation; and a number of new chairs were, therefore, created during the years 1875 and 1876.—In regard to the lowest classes and schools in which the study of modern languages may advantageously be admitted, there is a variety of opinion at present in school legislation, and among educational writers. It is evident that, in this respect, a marked difference exists between those localities where only one language is spoken, and those where two or more languages are in the daily use of large portions of the people. In the latter case, the language which is spoken by a large portion of the children who attend school, is by many not regarded in the light of a foreign language; and school regulations for giving instruction in it are often different from those for the teaching of languages totally foreign. The latter, according to the opinion of most educators, should not be begun too early. It is, however, on the other hand, urged that the pronunciation of a foreign language is best learned at a time when the organs of speech are still flexible, and that a good pronunciation of a foreign tongue is rarely acquired except by those who learn it in childhood.—The French language had been long and extensively studied in other European countries before it was, in the 17th century, introduced in some of the German schools as a part of the regular course of studies. Toward the close of the 18th century, the German real schools made the superior advantages of the study of French, in comparison with the classical languages, a main issue of their war against the classical schools; and, from that time, the admission of French into the schools of other countries has been rapid and extensive. In Prussia, the efforts made to secure to the French language a prominent place in the course of instruction were so successful, that the Prussian government became alarmed, and, in 1816, excluded it altogether from public instruction. A rescript of 1837 re-admitted it, however, "out of regard for its usefulness for practical life." That, from the stand-point of practical usefulness, modern languages, as a branch of instruction, have an advantage over the classical, is now scarcely disputed. French, English, and German bring the student into living contact with the great standard-bearers of modern civilization, and thus afford, in many cases, mental enjoyments, material and business advantages, and impulses to esthetic culture, which classical studies obviously cannot afford.—Being the keys to the three great literatures of the world, the English, German, and French languages, as branches of instruction, have challenged a comparison with the Latin and the Greek. Here also it will be readily and generally admitted, that modern literatures contain a vast amount of information unknown to the ancients; and that, viewing their contents as a whole, they are, in many respects, vastly superior to the literatures of the ancient world. Classical scholars, in fact, are among the first to recognize the great value of modern literatures; and there are few among them who cannot read the three great modern languages, at least, as fluently as the two classical. The contest has been narrowed down to the question whether Latin and Greek classics, as literary master-works, and in view of the superior advantages claimed for the languages themselves, still afford such advantages for developing the mental faculties as to recommend their retention in every course of studies. (See Classical Studies.)

Upon the field of comparative linguistics, the superior value of the richly inflected Latin and Greek by the side of the less inflected German and the mutilated English and French, is not likely to be ever disputed. But since the labors of Bopp, Grimm, and their numerous followers, have opened an insight into the degree of kinship existing between the prominent languages of the present and former times, the question has been forced upon the attention of grammarians, how far a comparison of kindred languages may, even at an early stage of instruction, elucidate the structure of the native tongue, and thus be made serviceable in giving to the youthful scholar a better command even of his native speech than otherwise would be attainable. The elucidative power which belongs to comparison, in grammar no less than in other branches of instruction, cannot be disputed; though the precise point of time when, and the manner in which, it may be put to use in the course of instruction, still remain open questions. It will be seen, however, that the degree of usefulness which may be attributed, from this point of view, to one particular language, is by no means commensurate with the advantages which the same language may afford as the key to the superior civilization or the rich literature of one of the great nations of the globe. It will, on the contrary, be chiefly dependent on the relationship existing between the language to be studied and the language of the student. In a French school, the Latin, Italian, and Spanish languages will, in this respect, be of more use than English or German; in German schools, the English will be more important than French or Latin; and in English schools, the German more than Latin or French.

Since modern languages have come to be studied on a much more extended scale than the classical, a great variety of methods have been proposed. The authors of some of these methods are by no means distinguished for modesty, and do not hesitate to declare all former modes of instruction absolutely useless, as having been wholly superseded by their own. In most cases, they have wholly forgotten that the method of teaching and learning a modern language must, to a very great extent, be dependent upon the purpose for which it is learned. If the student chiefly aims to acquire the ability to express his thoughts in the language of another person belonging to a foreign nation, the methods which make conversation the basis of instruction will justly commend themselves to the attention of the instructor. When a foreign language is learned as a means of understanding the literature of a particular nation, an early knowledge of the inflectional part of the language, of all its peculiarities in etymology and syntax, and of its vocabulary, will be felt as an urgent want; and grammar lessons connected with translating exercises, will form the chief means of instruction. In the combination of grammar and translation, every possible method has been tried: the strictly synthetical, which starts from the parts of speech, and teaches them singly, before proceeding to a regular system of translations; the strictly analytical, which begins with the analysis of foreign sentences, and from them, by degrees, derives the knowledge of grammatical forms; and the synthetico-analytical, or analytico-synthetical, which, from the first, endeavors to combine instruction in the grammatical structure with practice in using the foreign language. Of these, the former may be said to have been almost entirely abandoned, the latter being the one generally preferred in schools. In regard to the arrangement of the grammatical rules, an infinite variety may be observed in the numerous grammars of modern languages. It was especially Mager (q. v.), one of the most ingenious writers on the subject of language, who attacked the traditional order of article, noun, adjective, pronoun, and verb, and demanded the first place for the verb, so as to be able to begin with whole sentences, that is, with a complete thought. In regard to translating exercises, instructors generally agree in introducing their students as soon as practicable to the reading of standard writers in the foreign language. The shortness of time allowed for the study of foreign languages will recommend the use of a good reading-book in order to familiarize the student with the peculiar style of several writers.

It is not possible in this article to attempt an enumeration or a criticism of the different methods which have been specially proposed for teaching modern languages. Among those whose systems have obtained any general reputation or acceptance, may be mentioned Ahn, Jacotot, Hamilton, Mager, Ollendorff, and Robertson. Ahn's and Ollendorff's methods have had numerous imitations, of very unequal value, and have been applied to nearly all the living languages of Europe, and even to Latin and Greek. Of the elementary books based on Ahn's method, P. Henn's *Rudiments of the German Language* (4 parts, New York), written with a special view to the requirements of the public schools in the United States, and, in particular, in the city of New York, has deservedly gained very great popularity. Among recent attempts to teach living languages "without grammar or dictionary," solely by means of conversation, that by Heness (*Introduction to the Leitfaden; a Guide for Instruction in German without Grammar or Dictionary*, Boston, 1874) has attracted the attention and won the approval of many eminent scholars. Prendergast's *The Mastery of Languages* (London, 1872) is a new effort to introduce the pupil to a practical knowledge of language in an analytical way, by proceeding from sentences committed to memory and learning the inflectional forms from their position in sentences. Whitney's *Compendious German Grammar* (New York, 1869), to a higher degree than any former English grammar of a foreign language, embodies the results of comparative grammar, and directs special attention to the points of correspondence between English and German. It need hardly be added that the study of modern languages, and especially that of their pronunciation, should be pursued, whenever it is possible, under the guidance of an intelligent professional teacher. Among the attempts to teach these languages without the aid of a teacher, the method proposed by Toussaint and Langenscheidt has received the best recommendation. (See the special articles on French, German, Italian, Spanish.) See also Whitney, *Language and the Study of Language* (1867); and *Life and Growth of Language* (New York, 1875); Quick, *First Steps in Teaching a Foreign Language* (London, 1875); Marcel, *Study of Languages* (New York, 1874); Schmitz, *Encyclopädie des philologischen Studiums der neueren Sprachen* (2d ed., Leips., 1875; 4 parts and 3 supplements); Pfalz, *Ueber den Bildungswerth der fremden Sprachen im Schulunterricht* (Leips., 1875); Mager, *Ueber den Unterricht in fremden Sprachen* (Essen, 1838). A periodical specially devoted to the study of modern languages is the *Archiv für das Studium der neueren Sprachen* by Herrig (2 vols., in 4 parts annually, 55th and 56th vols., 1876.).

MONITORIAL SYSTEM, sometimes called the *Madras system*, because it was introduced into England from Madras, by Andrew Bell; also the *Lancasterian system*, after one of its most enthusiastic advocates, Joseph Lancaster. It is, moreover, often designated the *system of mutual instruction*, because conducted on the principle of requiring the pupils of a school to teach each other. The name *monitorial instruction* is derived from the circumstance that the pupil teachers employed to carry on the system were called *monitors*.—This plan of teaching is very old; but whether Bell or Lancaster deserves the merit of first introducing it into Europe, has been warmly disputed. (See Bell, and Lancaster.) By means of the efforts and publications of these ardent philanthropists, the system met with a rapid and extensive adoption both in Europe and America. In the city of New York, free schools were organized upon this plan, which continued to be the prevailing method of organization and instruction in the public schools of that city for nearly fifty years. In Philadelphia and other large cities of the Union, it was also employed; in Boston, it was soon pronounced a failure, and abandoned. The 25th Report (1830) of the British and Foreign School Society (Lancasterian) stated that measures had been taken by the governments of Belgium, Denmark, Sweden, Norway, and Russia, to introduce the system; that more than 30 monitorial schools had been for some time in operation in Tuscany; and that the duke of Lucca had also caused several of such schools to be established; that even the government of Naples had opened 20 of these schools in Sicily, and designed to establish one in each parish. The report also stated that the society had constantly a number of persons in training as teachers, and at the previous anniversary, had under its care 20 Arab youths, sent to England for education by the Pacha of Egypt. The rivalry that had existed for years between this society and the National School Society, which favored Bell's system, increased the efforts of both. In the *American Annals of Education* (1831), it was stated that, in Denmark, 2,000 monitorial schools were established in the course of four years; in Sweden, there were 1,800 of such schools, in many of which music, linear drawing, and gymnastics were taught. The system had also been introduced into France, Spain, and Sardinia. The French Society for the Promotion of Education sent books and tables of the system to the principal countries of South America and to Hayti, and opened schools at St. Louis and Senegal, in Africa, which were attended by the native chiefs. There were, also, numerous schools in Cape Colony, Madagascar, and the East Indies, both continental and insular. The system was also said to have been adopted in one of the first classical schools of Paris, and in the High School of Edinburgh.—The opinions entertained of the advantages of this system were at first very extravagant. Dr. Bell said, "The system has no parallel in scholastic history. In a school, it gives to the master the hundred eyes of Argus, the hundred hands of Briareus, and the wings of Mercury. By multiplying his ministers at pleasure, it gives him indefinite powers; in other words, it enables him to instruct as many pupils as his school room will contain." This principle was carried into effect by Lancaster, whose school had 1,000 pupils, he being the only adult teacher. "Crowds", says Donaldson (*Lectures on Education*, 1874), "flocked to see this performance: one master with a thousand scholars. It seemed to solve the question of education." De Witt Clinton, in New York, expressed the most unbounded admiration for this system as an instrument for educating large masses of children. But not only as a means of teaching large numbers was it commended. The system of mutual instruction was thoroughly discussed at a meeting of the American Lyceum held in New York, in 1836; and, while the New England members seemed to condemn it as unsatisfactory and defective, others gave it their unqualified approval. "If", said S. W. Seton, the public-school agent of New York city, "I had a school of twenty, nay of ten, I would make one teach another. If I had but three, I would make two of them monitors."—This system, when carried into operation by a master of energy and tact, was showy and attractive; and, doubtless, was an effective instrument in giving an elementary education to many thousands of children; that is, in teaching them to read, write, and cipher; but, as remarked by Donaldson, it "ignored altogether the fact that the work of the teacher is to evolve the powers of the mind, and that for this work a wise and cultivated mind is required." The arguments advanced in its favor were (1) that it provided for the tuition of a far greater number of pupils than could be taught by the ordinary method of managing an ungraded school, in which only one teacher was employed;

(2) that this was accomplished by an economy of the time and labor of the teacher; (3) that it kept every pupil of the school constantly employed; (4) that the monitors, or pupil teachers, were benefited by giving instruction to their fellow pupils; (5) that, as children learn, by a kind of natural sympathy, from each other, the pupils made rapid progress. These principles, without doubt, are sound to a certain limited extent, and under circumstances which prevented a thoroughly organized system of instruction by competent teachers. The monitorial system required very remarkable ability in the master — such an ability as few could be found to possess. The monitors required a special training; and the whole school, when thus conducted, needed a peculiarly efficient discipline, and an adroit management, to prevent it from degenerating into the most chaotic condition; and this was often the case. That the system was an expedient, and a very useful one, is obvious. That it is applicable to the condition of a large ungraded school under a single teacher, is also indisputable. "When", said a writer in the *American Annals of Education* (1831), in a despairing tone, "will our common and primary schools be so divided into different departments in regard to age and studies, and so furnished with a competent supply of assistant teachers, as to keep each pupil, during school hours, cheerfully and industriously employed?" The impossibility of obtaining the means for such an organization, led to the adoption of the monitorial system; but, wherever, at the present time, as in the large cities of the United States, such means are afforded, mutual instruction is found not to have even a modified existence; indeed, the reaction against it has been so strong, that, for years, it has not only made no progress anywhere, but has been very generally abandoned.

MONMOUTH COLLEGE, at Monmouth, Ill., chartered in 1857, is under United Presbyterian control. It has a fine college building, a library of about 2,000 volumes, a cabinet, and extensive philosophical and chemical apparatus. Besides the collegiate department, with a classical and a scientific course, there is a preparatory school, a grammar and high school, and a normal course, and a musical and an art department. Both sexes are admitted. The tuition fee in the collegiate department is $30 a year. In 1875—6, there were 16 instructors, and 397 students, of whom 200 (128 classical and 72 scientific) were in the collegiate department. The Rev. David A. Wallace, D. D., LL.D., is (1876) the president.

MONTAIGNE, Michel, Seigneur de, a celebrated French essayist, born at the château of Montaigne, in Périgord, in 1533; and died there September 13., 1592. His father, having ideas on the subject of education far in advance of his age, provided for his son a German tutor, who, knowing nothing of French, conversed with him entirely in Latin, so that the young Montaigne spoke that language with ease at the age of six. He graduated at the College of Guienne, in Bordeaux, and studied law; but, being possessed of ample means, and having no inclination for public life, he retired to his castle at Montaigne, where he wrote his famous essays. The subject of education is touched upon incidentally all through the works of this writer; but his conclusions are nearly all condensed into one remarkable essay, addressed to the Countess of Gurson, and entitled *Of the Education of Children.* Many of the principles there announced, were afterwards amplified by John Locke. In this essay, a scheme of education is laid down for a young gentleman of quality, which is, in nearly every essential respect, in accordance with our most advanced modern ideas. The subject is considered in its various branches,—physical, intellectual, and moral. The dominant idea throughout, is the modern one, derived from the etymology of the word *education, i. e., a drawing out* or development of the mind according to its individual bent, rather than a moulding of all minds after a preconceived pattern. He would have the pupil educated away from home, because his parents "can neither find in their hearts to give him due correction for the faults he commits, nor suffer him to be brought up in those hardships and hazards he ought to be," and because "the respect the whole family pay him, as their master's son, and the knowledge he has of the estate and greatness he is heir to, are, in my opinion no small inconveniences at these tender years." He would have him taught to use the knowledge he has gained, illustrating his position as follows: "I could wish to know whether Le Paluel or Pompey, famous dancing-masters of my time, could have taught us to cut capers by only seeing them do it, without stirring from our places, as these men pretend to inform our understandings without ever setting them to work, etc." Physical education, also, was fully appreciated by Montaigne, his conclusions on this branch of the subject being quite up to the standard in our day. The advantages of sound moral instruction also are strenuously insisted upon and admirably set forth in many weighty sentences. The advantages of foreign travel, in freeing the mind from narrowness, receive full attention, though the age at which this should be undertaken will probably be excepted to by modern educators. Finally, the idea, more peculiarly modern, perhaps, than any other, that education should not end with school or college, but should be continued through life, is everywhere enforced. This entire essay, indeed, is worthy of the careful attention of educators; and, making allowance for the difference in condition of the civilized world in Montaigne's days and ours, it may be considered, generally speaking, an admirable *résumé* of all that has been settled in regard to educational aims up to the present time.—In 1580—81, Montaigne visited Germany, Switzerland, and Italy for his health, and wrote a journal of his tour, which remained hidden in the family chest at Montaigne till 1774, when it was published at Paris. The principal English translation of his works is that of Charles Cotton (published about 1680), revised in 1842, by the younger Hazlett (Phila., 1849). An edition in 5 volumes, by De Coste, was published at the Hague, in 1772; and one by Victor Le Clerc, at Paris, in 1826. Bayle St. John published a biography of Montaigne (London, 1857).

MONTANA, one of the territories of the United States, set off from Idaho, and organized with an independent territorial government in 1864. Its area is 145,776 sq. m., and its population, in 1870, was 20,595, of whom 183 were colored, 1,949 Chinese, and 157 civilized Indians.

Educational History.—The legislature of the territory, at its first session, passed a law for the establishment of schools, but the sparseness of the population and its migratory character, deprived the law of its practical value. In 1872, the subject was again taken up, and a new law was passed, under which about 80 school-districts were organized. In 1874, the law was again amended, resulting in the present system. The first superintendent of public instruction was Cornelius Hedges, appointed in 1872, re-appointed in 1874, and still in office (1876).

School System.—The supervision of the schools is entrusted to a *superintendent of instruction*, who is nominated by the governor for two years, and confirmed by the council. He prescribes all needful regulations, designates the course of study and the text-books to be used in the schools, and makes a biennial report of their condition to the governor. *County superintendents* are elected each for two years. They are eight in number, and perform the usual duties of such officers. They make annual visits to the schools in their counties, and receive not more than $10 for each district under their supervision. They are also allowed to charge $2 for each teacher's certificate granted. Under the present law, these certificates are of one grade only, and are given for only two years; but the character of the examination, depending, as it does, upon the caprice of the county superintendent, leads to a want of uniformity in the value of the certificates, which has been a cause of complaint. *District trustees* are also chosen for three years, three in each district constituting a board. Their duties are to employ teachers, furnish books, take charge of school-houses, furniture, etc., and exercise an immediate supervision over the schools, subject to the direction of the territorial superintendent. With these boards, also, rests the power of submitting to the voters of the district the question, whether money shall be raised by taxation, whenever additional school facilities are needed. They may, also, establish a high school in each district, grade it, and employ teachers to conduct it, whenever such school is needed. Resident voters may decide, at the annual election, what amount they shall raise by taxation for the building of school-houses; but they are not authorized to issue bonds, nor incur any indebtedness for the purpose. Provision is made for the separate education of colored children in each county, by the establishment of special schools, on application of the parents or guardians of not less than ten colored children, to the board of trustees. Less than ten may be provided for in any manner deemed advisable. The school age is between 4 and 21 years; the legal school year, 3 months; and the school day, 6 hours. The school revenue is derived from the school fund, which is the interest on all moneys derived from land grants, and from the school tax, which is levied by the county commissioners annually, at a rate of from three to five mills on every dollar of taxable property. The school fund is apportioned according to the number of children of school age.

Educational Condition.—The number of organized school-districts, in 1875, was 96; the number of school-houses, 76; the average duration of schools, 92 days. The *school revenue* was derived from the following sources:

County tax	$30,011.01	
Local tax for school-houses	17,059.63	
Other sources	4,043.62	
Total		$51,114.26
Expenditures for the year		$31,821.68
School population		3637
Number enrolled in schools		2337
Number of teachers, males	56	
females	43	
Total		99

Normal Instruction.—No provision has yet been made for the special instruction of persons intending to teach in the schools of the territory.

Teachers' Institutes.—The first convention of school-teachers in the territory was held in 1874. This was composed of the teachers of Deer Lodge Co., and the territorial superintendent was the president during its temporary organization. Measures were taken for the establishment of a permanent teachers' institute, and several educational subjects were discussed.

Secondary Instruction.—In 1875, the number of private schools was 14, with 292 pupils. There are, besides, a small number of high schools, and denominational schools and academies.

Superior, Professional and Scientific, and Special Instruction.—No opportunities for this kind of education are, as yet, afforded, the energies of the people being almost entirely devoted to the development of the mines and the cultivation of the soil. In the report for 1873, the superintendent, Cornelius Hedges, said: "Our people are generally poor and very scattered. Many of our school-districts are of greater area than whole counties in the Eastern states." Again, in 1875, he said: "Only 6 states, and none of the territories, unless the District of Columbia be so reckoned, surpass Montana in the amount of money raised *per capita* of its school population, and this without any aid derived from permanent funds, such as most of the older states possess."

MOORE'S HILL COLLEGE, at Moore's Hill, Ind., founded in 1856, is under Methodist Episcopal control. It is supported by tuition fees, and an endowment of $18,000. It has apparatus, a cabinet, and a small library. Both sexes are admitted. There is a preparatory and a collegiate department, with a classical and a scientific course, and also a musical, a normal, and a commercial department. The cost of tuition in the collegiate department is $30 per annum. In 1875—6, there were 5 instructors, and 120 students, of whom 23 were of the collegiate grade. The presidents have been as follows: the Rev. Samuel R. Adams, A. M., 8 years; the Rev. Thomas Harrison, A. M., 6 years; the Rev. John H. Martin, A. M., 2 years; the Rev. F. A. Hester, D. D., 4 years; and the Rev. J. P. D. John, A. M., the present incumbent (1876).

MORAL EDUCATION has for its sphere of operation the culture of those principles which influence or control the voluntary action of human beings. The elements of self-control exist, in a greater or less degree, in every mind, as a part of its original constitution. They are distinct from its intellectual faculties, and need a special education, which is far more important than intellectual education, because it contributes in a much higher degree to the good both of the individual and of society. The subject of moral education is *duty*, and its office is both speculative and active; that is (1) to implant correct principles of rectitude in the pupil's mind — to teach what duty is, and (2) to cultivate a desire to do what is right for its own sake — to respect duty, or moral obligation; in other words, to feel a sense of right — to listen to the voice of conscience (q. v.); to which may be added, as an important additional object, to implant in the youthful mind such *motives* as will aid the moral sense, and enable it to triumph over the natural propensities and desires, when the latter are in conflict with it. The means employed in moral education are the following: (1) *precepts*, addressed both to the understanding and to the conscience, the object being to enlighten the latter, which of itself does not recognize specific right and wrong; (2) *example*, appealing to imitation as well as to conscience, and enforced by the love and respect felt by the child toward its educator, leading the former to feel that whatever is done by the latter is right, and hence should be imitated (see EXAMPLE); (3) *habit*, inducing, by means of repetition, an inclination to act in the same way under the same circumstances (see HABIT); (4) *exercise*, for the purpose both of strengthening the moral feelings brought into play, and of forming habits. Exercise, in moral education, is just as important as in physical or intellectual education; indeed, there can be no training or culture without it; and, in carrying this on, the teacher must avail himself of every possible circumstance that arises in connection with his intercourse with the pupils, or their intercourse with each other, to give occasion for this exercise, and thus form a basis for the desired culture of the moral faculties. This culture or training must have a twofold object: (1) to cultivate virtues, and (2) to correct vices. Among the former, as especially necessary, may be enumerated truthfulness, honesty, justice, candor and modesty, kindness or benevolence, diligence, obedience to proper authority, gratitude, fidelity to every promise or trust, and patriotism; and among the latter, the opposites of these, as lying and deceit, a disposition to steal, cruelty to animals, unkindness and injustice to playmates, violence and combativeness, ill temper, anger and irritability, obstinacy, laziness, irresolution, leading to procrastination, excessive self-esteem, leading to arrogance and self-conceit, etc. These are specific qualities of character which need a particular recognition and treatment on the part of the educator; but when the moral sense has been thoroughly developed, the Christian moral principle, to do unto others as we would that they should do unto us, will comprehend, in approbation or condemnation, every class of actions, and give the means of a just discrimination as to what is virtuous and what is vicious. But the conscience is not developed in children; and very often, not even in adults. Hence, the need of moral discipline, in order to afford to the educator the means of bringing to bear upon his pupils external restraint, as preliminary to self-restraint; for it must be borne in mind that any government that does not contemplate the cultivation of the elements of self-control can scarcely be considered as forming a part of moral education. The three elements of sensibility usually appealed to in connection with moral discipline or restraint, are fear (q. v.), hope (q. v.), and love (q. v.). (See also AUTHORITY.) The conscience being very imperfectly developed in childhood, secondary motives, such as the love of approbation, the hope of reward, the desire to excel, may properly be appealed to, in order to promote well-doing on the part of the pupil, and thus lead to the formation of good habits. Caution should be exercised, however, in employing such incentives; and the educator should always keep in view the just limits of their use, the injurious consequences of depending too exclusively upon them, and the importance of so employing them that they may lead on to the primary motive—the desire to do right for its own sake. (See EMULATION.) The practical application of the system here briefly outlined, is attended with very great difficulty, and requires peculiar intelligence and skill on the part of the educator; and not alone this, but moral culture, involving self-control, patience, and a delicate appreciation of moral distinctions, as well as a full sympathy with the general peculiarities and wants of childhood. To this may be added, with emphasis, the ability to discern the peculiarities of individual character, as dependent on both mental and physical constitution; for the processes of moral education cannot, like many of those employed in intellectual training, be applied to children in large masses. Suitable modifications must be made in the application of general principles and rules, or much injury may be done. (See DISCERNMENT OF CHARACTER.) In this important department of education, the teacher may find very useful suggestions, both for information and guidance, in the following works: SPENCER, *Education; Intellectual, Moral, and Physical* (N. Y., 1866); CURRIE, *Common-School Education* (Edin. and London); ABERCROMBIE, *The Philosophy of the Moral Feelings,* edited by Jacob Abbott (Boston, 1836); Dymond, *Principles of Morality* (N.Y., 1851); Gow, *Good Morals and Gentle Manners* (Cincinnati, 1873); Rosenkranz, *Pedagogics as a System*, trans. by Anna C. Brackett (St. Louis, 1872). (See also Moralizing.)

MORALIZING, the formal inculcation of moral truth by means of precept, or of stories related for the sake of the moral, with the view of influencing conduct. This practice, common in the home circle and in the school, is the result of a consciousness on the part of the parent or teacher of a duty unperformed, the discharge of which is attempted in this perfunctory way. It is hardly necessary to say that it almost always fails; since it is either an attempt to reason with the young—a process for which their minds are not yet sufficiently mature—or an effort to impose mechanically on their minds generalizations which can only be reached naturally after the observation of many individual instances. In either case, the abstract nature of the appeal is so far beyond their powers, that the attention which is given, if indeed it is given, is only the amiable toleration of a discourse which arouses no interest. Of course, moral lessons received in such a spirit accomplish no useful purpose, if indeed they are not positively hurtful; since they tend to produce disgust for an important branch of education, which in maturer years, would be interesting. The conceptions existing in the minds of children and youth being in large measure concrete, the true method of approaching their intelligence is through concrete images. In intellectual training, this is usually done, and is always the most successful method. In one of the methods of moral training above referred to—that of moral stories—this is attempted, and doubtless, it is supposed, with success; but it is safe to say that the interest aroused is not extended to the moral deductions drawn from the acts of the persons introduced, but ends with the acts or actors themselves. Thus the fables of Æsop are interesting to the young only as long as the men and animals are, so to speak, in motion. When the moral is reached—which is not till after the narrative has been brought to a climax, and the actors have been dismissed—their interest is at an ebb; and not till many years later is that moral brought home to them by the manifold experiences of life. This, therefore, is the peculiar value, and the only proper use of the fables of Æsop, namely, that they present in a striking way the truth desired to be impressed on the mind, not with the design of making it immediately influential, but with an effort which, for the moment, is apparently without result—the feeling which attends the planting of a seed, *i. e.*, the certainty of future development. It is difficult, of course, for the parent or teacher who has the well-being of a child sincerely at heart, to leave him in that seeming neglect which a forbearance from moral discourse appears to countenance; and the pseudo-maxim, that some training is better than none, here intervenes to increase the difficulty; but it should never be forgotten that the object to be attained is not a present, but a future, and a far more important, one—the determination of the pupil's conduct through life; and any course which shall hazard this is not only valueless, but evil. The mind of youth, in fact, is not given to that sober, contemplative process which we call moralizing. Its natural disposition is one of gaiety, ceaseless activity, and even boisterousness. The exuberance of spirits natural to this period of life, therefore, makes the child indisposed to give patient attention to any purely speculative process of thought. That this is a wise provision of nature for the development of the physical powers, has long been recognized by observant educators; and any attempt to curb this spirit, with the view of inculcating moral truth, only inverts the natural order of development, and, in healthy children is apt to result disastrously. The only method of moral training effective with youth is that which discards formal precepts, and by restraint of actual vice, or practice of the desired virtue, engrafts it insensibly on the daily conduct. The habit of right acting is thus unconsciously acquired, but not till a much later period is the mind disposed to survey critically this action, and pass judgment upon its propriety. The maturity of the mind is an indication of the proper season for moralizing.

MORAL SUASION. See Corporal Punishment.

MORAVIAN BRETHREN, or **Moravians,** a common designation of the *Unitas Fratrum*, a body of Protestant Christians, distinguished for activity in missionary work among the heathen, and also in the education of the young. The church was founded in 1457 A. D., by followers of John Huss, the Bohemian reformer and martyr (died at Constance, July 6., 1415); and flourished in Bohemia, Moravia, and Poland until the anti-reformation under Ferdinand II., 1621—7. A "hidden seed," however, remained; and, in 1722—7, descendants of the ancient Church of the Brethren, to the number of about 300, settled at Herrnhut, in Saxony, on an estate belonging to Count Zinzendorf, forming the nucleus of the Renewed Brethren's Church, to which other emigrants from Bohemia and Moravia, with many of the inhabitants of other countries of Europe, joined themselves. Since that time, the church, though still small in numbers, has spread over the world, carrying on a vast mission work; and, at the present time, it supports many educational institutions. There are three chief missionary provinces: Continental Europe, Great Britain, and the United States.

I. *Ancient Church* (1457—1627).—Very soon after the founding of the church, the brethren began to devote themselves to education; the first schools were held in the parsonages of the ministers, the scholars being chiefly candidates for the ministry. Soon, however, parochial schools were established for thorough training in the elements of knowledge, including the Latin language; many of the pupils were not members of the church. Classical schools or colleges were founded at Eibenschütz (under Esrom Rüdinger, of Wittenberg), Meserritsch, and Fulneck, in Moravia; Lissa, in Poland; and other places; these colleges were well attended, many of the students being Roman Catholics. In 1585, there were, in addition, three theological seminaries,—at Jungbunzlau, Bohemia; and Prerau and Eibenschütz, in Moravia; to these was afterwards added one at Lissa, in Poland. The most distinguished educators in the ancient Church of the Brethren were Blahoslav, the author of a Bohemian grammar, still in use; Rüdinger; and John Amos Comenius. The latter was a skillful educator, and his new methods of teaching gained him great celebrity. He is one of the forerunners of the so-called "modern" system of object-teaching and of the kindergarten. He was in constant correspondence with prominent educators throughout Europe, and traveled much in the cause of education. He finally settled at Amsterdam, in Holland, where he died Nov. 22., 1670. Up to the day of his death, he was unwearied as a writer in behalf of education and of his beloved church, of which he had become the senior bishop. (See COMENIUS.) Though that church was now seemingly stamped out of existence, he hoped against hope that it would be restored. And this hope was fulfilled. Emigrants, for conscience' sake, from Bohemia and Moravia, were the first settlers of Herrnhut, in Saxony. The first little band arrived in June, 1722; and, on May 12., 1724, the corner-stone of the first school-house was laid. This building was erected in pursuance of a plan formed by Zinzendorf to establish institutions similar to those at Halle, where he had studied under Francke. Though the project was soon abandoned, particularly as this first school in Herrnhut proved a failure; still, from that day, May 12., 1724, dates the educational activity of the Renewed Brethren's Church.

II. *Renewed Brethren's Church* (1727—1876). The school, therefore, preceded the organization of the church. As additional congregations were founded, parochial schools were introduced; with the spread of missions, schools for the instruction of the converts were begun; theological schools were needed for the education of ministers; and friends of the church urged the establishment of boarding-schools. The most prominent educators within the church, and especially in the German province, have been Johann Nitschmann, Sr.; Polycarp Müller, the founder of the scientific internal development; Paul Eugen Layritz (author of a Latin dictionary long in use), who, with his son-in-law, Christian Theodor Zembsch, the latter for 55 years teacher and president of the *Pædagogium*, may be considered the real founder of the Moravian school system. Bishop Johann Friedrich Reichel, though not directly employed as an instructor, deserves special mention, as he was very active in the establishment of boarding-schools, the *Pædagogium*, and the theological seminary. By his wise counsel he assisted those more actively engaged in teaching to overcome many of the difficulties which attended the establishment of the new school enterprises.—Up to the year 1769, the Hallean or pietistic mode of education prevailed. With the rise of the philanthropic school (Voltaire, Basedow, etc.), the Brethren adopted those of the new ideas which seemed to them good, suitable, and not in conflict with Christian principles; and, thus, in place of the pietistic asceticism of Halle, there came a tendency which was more humanistic, and more friendly disposed toward the culture both of ancient and modern times. The present educational activity of the church will be considered under the following six heads:

(1) *Primary Schools.*—Great stress is laid by the Brethren on the importance of home training; and it is officially recognized that "the foundation of the future good or evil conduct of a child is laid at home, and that the faults and defects which there develop themselves are seldom or never remedied elsewhere."

(*a*) Infant schools—up to the 7th year of age. In many of the congregations, especially in Europe, infant schools are kept, the main object of which is "to employ the little ones with short and easy lessons, and to awaken their faculties, —not to burden the mind at the expense of their health, and of the future development of mind and body." The main requisite is held to be "a suitable teacher, fond of children, who can enter into their feelings, and understand how to manage and interest them."

(*b*) Parochial schools—from the 7th to the 14th year. In Europe, generally, and, in America, in several places, there are parochial schools, open to children of the congregation, and also to others. Religious instruction forms an important part of the education, the object being to care for the heart and soul as well as for the intellect. In these schools, all the fundamental branches are taught; too rapid development is, on principle, avoided. Wherever parochial schools, from the nature of the case, cannot be kept, other schools, public or private, are used, preference being had for those in which Christian principles prevail. In these cases, religious instruction is, in part, supplied by

(*c*) Sunday-schools, which are more common in America than in England or Germany. In these latter countries, they are more confined to their original purpose,—to impart instruction, secular or religious, to those who are unable to obtain it during the week.

(2) *Boarding-Schools*—from the 7th to the 18th year, and upward. The first boarding-school was opened at Neuwied on the Rhine, Prussia, in 1756. The number of church boarding-schools had increased to 51 at the close of the year 1875. The number of scholars, each year, ranges from 2,500 to 3,000. In the German province, there are 30 schools, 14 for boys (600 pupils), 16 for girls (759), including the two boarding-schools and the primary department for the children of missionaries. In the British province, there are 15 schools; 6 for boys (281

pupils), and 9 for girls (302), one of those for boys being a primary boarding-school. In the American province, there are 6 schools; 2 for boys (180 pupils), namely, Nazareth Hall, Nazareth, Northampton Co., Pa. (125 to 150 pupils); Salem Boys' School, Salem, Forsyth Co., N. C. (30 pupils); and 4 for girls (750 pupils); namely, Seminary for Young Ladies, Bethlehem, Pa. (250 pupils); Linden Hall, Litiz, Lancaster Co., Pa. (80 to 100); Salem Female Academy (about 225 pupils); and Hope Seminary, Hope, Bartholomew Co., Ind. (60 to 80 pupils). The course of study, in all these schools, embraces, first, the fundamental branches, and after that, whatever accomplishments are deemed necessary by the parents. and by the demands of the times. Special attention is paid to music, mathematics, and the classical and modern languages. As far as is known, the Seminary at Bethlehem, which was opened as a school for girls in 1749, and as a boarding-school in 1785, is the pioneer school in America in the education of women. At Nazareth Hall, there are special classes to prepare boys to enter either a college or a polytechnic or scientific school; the former with a special view to the theological seminary. One peculiarity of the method of training is the constant supervision of all the scholars by the teachers, the ideal being the watchful care of parents over the family. Though irksome to boys and girls, this principle of Moravian education still commends itself to those who have the responsible charge of the pupils. The aim of all the boarding-schools is not brilliancy of attainments, but a solid foundation; and, at the same time, to be equal to the standard of modern requirements. Due and careful attention is paid to moral and religious training. Besides the church schools, there are other private boarding-schools conducted by members of the church, notably those for boys at Litiz. The same principles of education prevail in all.

(3) *Classical Schools and Colleges.*—The principal college is that at Nisky, in Prussia, officially styled the *pædagogium*, with 60 students. The course of study is equal to that of the German gymnasia of the higher class, and special attention is paid to the Hebrew language. In the schools at Fulneck, England, and Nazareth, Pa., classical studies are pursued by the higher classes of boys who prepare for college or the university. Many of those at Nazareth Hall, especially those who are candidates for the ministry in the Moravian Church, continue their classical studies in the Theological Seminary at Bethlehem, Pa. The preparatory classical course continues two years.

(4) *Theological Seminaries.*—The seminary of the German province, founded in 1735, is now located at Gnadenfeld, Prussia. The number of students averages 25, in 3 classes, with 4 professors. The theological course, of three years, is very thorough. The seminary of the British province is the Training Institution, founded in 1860, at Fairfield, near Manchester; it combines a seminary proper and a normal school. The seminary of the American province, founded in 1807, at Nazareth, since 1858 permanently located at Bethlehem, incorporated in 1864 as The Moravian College and Theological Seminary, though familiarly known by the latter half of its title, averages 30 students, with 4 professors. The course of study, after two years' preparatory training at Nazareth, is for 6 years; three and a half devoted to the classics, mathematics, natural science, Hebrew, and philosophy, and two and a half years to theological studies. Special attention is paid, throughout the course, to the study of German. The full course of training for a minister, therefore, occupies 8 years, or its equivalent in work. Classes are formed biennially. The endowment fund is very small; but the charge for students preparing for the Moravian ministry is nominal, the expenses being defrayed by the church.

(5) *Special Schools.*—In Germany, there are two normal schools for training young men and women as teachers; a missionary institute for training missionaries; and a technical school at Gnadenberg, Prussia. In connection with the mission work, there are normal and industrial schools; in the latter, instruction is given in agriculture, mechanics, printing, book-binding, etc.

(6) *Schools in the Missionary Provinces.*—The instruction of old and young in religion, general knowledge, and industrial art, is a chief part of the duty of the missionaries of the church. Their labors in education cover the following field: Greenland, Labrador, the North American Indians, Mosquitia, the English and Danish West Indies, Dutch Guiana or Surinam, South Africa, Australia, and West Himalaya. In these mission provinces, there are the following schools: (1) a theological seminary, in Jamaica, W. I.; (5) normal schools—2 in Jamaica, 1 each in Antigua, in Surinam, and in South Africa; in Greenland, 4 normal classes; and in Labrador, 3, at different stations, as the isolation prevents complete union in a normal school. The pupils number, in all, about 100; but the number increases each year. There are maintained 217 day schools, at or near the 92 mission stations, with 756 teachers and 15,173 scholars; besides Sunday-schools. With the most, infant schools are also connected; many adults attend special classes. Many of the scholars are not connected with the church. The instruction ranges from a primary to a grammar-school grade. It may be mentioned that "among 1,200 colonial schools in Gippsland, Australia, the school for natives at Ramahyuk, consisting of perhaps the lowest and most degraded of heathen tribes, the aborigines of Australia gained, in 1873, the highest prize offered by the government."

Principles of Education.—The schools of the Brethren are conducted on religious, though not sectarian, principles. In regard to the method of teaching, the General Synod of 1869 reiterates: "While we would earnestly endeavor to keep pace with other schools in imparting a store of solid useful knowledge, we would not aim at that extent or display of learning which tends to foster vanity, to lead to the neglect of proper regard for health, and to destroy that simplicity of mind and buoyancy of spirit which are essential to the success of our efforts."

The Renewed Church of the Brethren has produced no educator with a world-wide influence like Comenius; the energies of her school-men have been directed to the improvement of the church schools. Indirectly, however, the Moravians have done much for the cause of general education, by impressing on all their schools the essential points of the German method of instruction, "which is unostentatious, patient, laborious, and therefore, likely to be thorough." (W. C. Reichel, *Nazareth Hall and its Reunions.*) In the majority of the schools, there is instruction in physical training. There is no opposition to the common-school system. On the question of the co-education of the sexes there has been no discussion or action, as no necessity for it has arisen.

Statistical Summary.—On the 1st of January, 1875, with a home membership of 17,993 communicants (total membership, including children, 29,305), there were under the care of the Moravians 4 theological seminaries, with 83 students; 4 colleges and classical schools, with 140 students; 9 normal schools and 7 normal classes, with 150 students: 51 boarding-schools, with about 2,700 pupils; 217 common schools in the mission provinces, with 15,173 pupils; also about 200 pupils in the technical and industrial schools; and about 3,000 pupils in parochial and infant schools—a total of persons under instruction of 21,446. Adding the Sunday-school pupils, the grand total swells to 43,500. The number of professors and teachers in the seminaries, colleges, boarding-schools, and parochial schools ranges between 500 and 600; of teachers in the mission field, 750; of Sunday-school teachers, about 1,500. Further information in regard to the Moravian schools and school system may be found in Comenius, *School of Infancy* (London, 1858); Plitt, *Das theologische Seminarium* (of the German province); Gammert, *Geschichte des Pædagogiums* (at Nisky, Prussia); W. C. Reichel, *History of Bethlehem Female Seminary*, and *Nazareth Hall and its Reunions*, which contains a brief sketch of the Theological Seminary of the American province; Verbeek, *Anleitung für Lehrer und Lehrerinnen;* and the *Synodal Results of* 1869.

MOROCCO, or **Marocco,** an empire in the north-western part of Africa; area, 259,000 sq. m.; population, about 6,000,000. In ancient times, it formed part of the territory known as Mauritania, and subsequently of the Roman empire, with which it remained up to 429 A. D., when it was overrun by the Vandals. After its reconquest, in 534 A. D., it formed a province of the Eastern Empire. Upon its conquest by the Arabs, in the 7th century, Mohammedanism was introduced, to which religion, at present, the whole population, with the exception of several hundred thousand Jews, belongs. Education, in Morocco, is in a very low state. All that remains of the ancient universities, at the present day, is the university of *Dar-el-ibn*, which, in the middle ages, had an extensive reputation, and was attended by Arabs from all parts of Africa. It still confers academic degrees; and its head, the Mufti, is one of the most prominent men in the empire. Young men destined to letters, law, or the service of religion, are instructed here in grammar, Arabic poetry, and Mohammedan law and religion; otherwise, education is confined to reading and reciting passages of the Koran. The libraries of Fez and Morocco, which were once celebrated throughout the Arabic world have disappeared; and the study of medicine, which at one time had been brought to a great degree of proficiency, has completely degenerated. As in other Mohammedan countries, whatever primary instruction is afforded is given in schools connected with the mosques; but, there are no statistics to show to what extent this exists.

MOTHER. See Home Education.

MOTHER-TONGUE, the language in which the child utters the first articulate sounds, and in which his education is conducted until he is sent to school. It is so called because the mother is the child's natural teacher during this period; and it is the mother's vocabulary, construction, and pronunciation that are copied by the child, and that constitute the germ from which the child's own language gradually develops itself. That this prerogative of the mother-tongue should be sacredly respected, and that no circumstances should be permitted to weaken its influence, will not be disputed by any educator. It is, however, no interference with this that children, by associating with companions who speak a different language, should learn, at an early period, to converse in a second tongue; since, when the mother exerts her legitimate influence, the language in which she communes with the child will continue to be the first moulder of the youthful mind.—The privileged position of the mother-tongue during the first years of a child's life, ceases with the beginning of school instruction. The language of the school is not necessarily the mother-tongue, but the national language. The terms are by no means identical, as is frequently assumed. It is obviously a great advantage that children, on entering school, should find there the language with which they are familiar, and through which the first development of their mental powers has been conducted, and their little stock of knowledge has been obtained. It is thus easy for the intelligent teacher to establish at once the most complete harmony between family education and school instruction. But millions of children, even in civilized countries, are still growing up without this advantage; and, upon being sent to school, are placed under the instruction of a teacher whose language they understand either very imperfectly or not at all. In consequence of the extensive intermigration which characterizes this age, the children of foreigners, in many parts of the world, are quite frequently received into public schools the language of which is unknown to them; and it is evident that all that is possible, in such cases, is some special attention on the part of the teacher to the educational wants and to the progress of the little strangers. But as few countries, at the present time, are inhabited by people of only one nationality, it is also very common to find localities, or even large districts, where a large portion of the children—indeed, sometimes the majority—speak at home a language different from that in which they are instructed at school. Thus the Celtic and the German mother-tongues are extensively met with in English schools; the Polish, Wendish, and French, in German schools; the German, Polish, Finnish, and many other languages, in Russian schools; and the Italian, in French schools. In such cases, it is not uncommon to find that nearly all the young pupils understand some other language better than that through which they receive their school instruction, and in which they are expected to reach the highest state of perfection. Wherever this state of things exists, it forces upon the attention of teachers and school legislators the question to what extent any claims in behalf of the mother-tongue, either as a means or as a branch of public instruction, deserve consideration. The legislation on this subject has been very vacillating, and still greatly differs in various countries; but the general tendency, at present, is to extend, by means both of school legislation and school education, the domain of the national language. (See National Language.)

MOUNT SAINT MARY'S COLLEGE, a Roman Catholic institution, chartered in 1830, is situated about 2 miles from Emmettsburg, Md. It has a preparatory and a collegiate department, and possesses excellent philosophical and chemical apparatus, a mineralogical collection, and libraries containing about 11,000 volumes. The regular charge for tuition, board, etc., is $150 per session of five months. The system of education is a combined classical and commercial one, including the various arts and sciences usually taught in colleges of the first class. In 1875—6, there were 12 professors, 18 other instructors, and 180 students. The Rev. John McCloskey, D. D., is the president (1876).

MOUNT SAINT MARY'S SEMINARY OF THE WEST, a Roman Catholic institution in Cincinnati, Ohio, was founded in 1848. The course of instruction is of two grades, preparatory and theological. In the preparatory department, all branches pertaining to a regular collegiate course are taught in seven different classes, embracing as many years of study; of these, the last four correspond to a regular college course, the first three embodying the preparatory studies. The theological course embraces a period of three years. The library contains about 15,000 volumes. All students are required to pay $160 a year toward board and tuition. In 1875—6, there were 8 instructors, and 111 students, all preparing for the priesthood. The Very Rev. F. J. Pabisch, D. D., LL. D., has been the president of the institution since 1863.

MOUNT UNION COLLEGE, at Mount Union, near Alliance, Ohio, was organized as a seminary in 1846, as a college in 1858. Among its distinguishing features are entire liberty in the choice of studies, the prominence given to practical studies, its Christian, but not sectarian nor partisan character, the admission of females to equal privileges in all the departments, and its economy for students. The college has productive funds to the amount of over $451,000, and valuable apparatus and extensive cabinets. There are four general courses of four years each, namely, science, philosophy, liberal literature and arts, and classics. The special courses are music, fine arts, normal, and commercial. There is a preparatory department. The degrees of Master of Arts, Master of Science, and Master or Doctor of Philosophy, are not honorary degrees, but are conferred on those who have completed, and sustained an actual examination in, a suitable post-graduate course of one year's study. In 1875—6, there were 18 instructors and 842 students, of whom 344 were in the collegiate department. The Rev. O. N. Hartshorn, LL. D., is (1876) the president.

MUHLENBERG COLLEGE, at Allentown, Pa., is under Evangelical Lutheran control. It was opened as a seminary in 1848, and as a college under its present name in 1867. It is supported by tuition fees, synodical aid, and the income of an endowment of $50,000. The buildings are surrounded by about five acres of ground. The libraries contain about 3,600 volumes. The institution embraces a collegiate department, with a course of four years, and an academic department, with a course of three years. The cost of tuition in the collegiate department is $50 a year. In 1874—5, there were 8 instructors and 111 students (42 collegiate and 69 academic). The Rev. Frederick A. Muhlenberg, D. D., has been the president of the college from its organization.

MURRAY, Lindley, was born in 1745 at Swetara, near Lancaster, Pa.; died near York, England, in 1826. He at first devoted himself to the law, but abandoned it for commerce at the outbreak of the disputes with the mother country, and retired with a competency, on the establishment of American independence. In 1784, he went to England for his health; and, after some months, fixed his residence at Holdgate, near York, where he remained until his death. Murray never was a professional teacher. His *Grammar* arose out of some lessons which he gave to the assistants at a girls' school in York. His pupils appreciated his efforts, and urged him to write an English grammar. This appeared in 1795, was followed by a book of exercises and a key, and has passed through a great number of editions, both in England and America. It was compiled from Harris, Lowth, Blair, Campbell, and others; and the larger edition, at least, contains many good points. Its faults are too frequent vagueness and want of simplicity in the language, together with deficiencies in the accidence, which were perhaps inseparable from a work written at that date. A good teacher might occasionally gather useful matter from Murray's Grammar, but would not use it as a class-book. Mr. Washington Moon, in *Bad English* (London, 1868), has drawn attention to passages in the Grammar in which Murray has violated his own rules. A few of Mr. Moon's criticisms, however, it is impossible to agree with. Murray published several reading books also, besides some works of a religious nature. He was a member of the Society of Friends, and a man of great benevolence. The *Autobiography* of Murray, down to 1809, appeared after his death, with a continuation by Elizabeth Frank. This autobiography was written in the form of letters, and contains some interesting passages. The continuation is an undiscriminating eulogy of Murray and his works; it heaps up testimonies as to their value, but says not a syllable of those who, like Crombie, had criticised various points in the Grammar.

MUSIC, according to the Old Testament, was cultivated by the earliest inhabitants of the earth. However this may be, there is unquestionable proof that Joseph, and further on in Hebrew history, Moses and his sister Miriam, were well versed in the customs, and were measurably acquainted with the arts, of the Egyptians, which included the use of the lyre and other musical instruments, rude sculptured forms of which may be seen in ancient Egyptian temples to this day.—It is an interesting study, to trace the progress of music among the Israelites, who not only employed it religiously to express their joy and gratitude to Jehovah for their safe deliverance from the hands of their enemies, but in war and on social occasions, sought its inspiriting power to encourage the soldier to renewed effort, on the one hand; or, in friendly gatherings, to assuage, pacify, and amuse, on the other. The priests themselves assisted in this work among the ancient people of God. These musical influences were cultivated and advanced with the increasing number and power of the Jews, until they arrived at the height of their glory during the reigns of David and Solomon. The immortal lyrics of King David are called the national songs and hymns of the ancient Hebrews. Much has been written to show the character of the music formerly sung in the temple to the exceedingly varied sense of the psalms. Antiphonal effects were probably produced by choirs under separate leaders, but the grand director of them all was David himself. The instrumental accompaniments must have been of no mean order. We find, on examination, that the harp, the psaltery, the shawm, the cornet, the lute, the tabret, the cymbals,—"every thing that has breath," that is, every thing that had a resonant body which would vibrate through the action of the air upon it,—all were to be used in carrying out the divine injunction, "Praise ye the Lord!"—Four hundred years later, while Daniel stood high in the favor of Nebuchadnezzar at the court of Babylon, we read of the setting up of a golden image by the king, which Daniel was required to worship at the moment when he should hear the sound of the "cornet, flute, harp, sackbut, psaltery, dulcimer, and all kinds of music." Of these ancient musical instruments, the harp, the psaltery, the lute, and the dulcimer were stringed; while the cornet, the trumpet, the flute, and the sackbut were wind instruments. The sackbut was the precursor of the trombone, as the tabret or timbrel was of the tambourine and drum. Egyptian, Babylonian, Assyrian, Phœnician, as well as Hebrew, were familiar with the use of these instruments, their music being probably of a unisonant character, and destitute of what is known to modern Christian nations as harmony, technically so called. All these elder peoples contributed to that beautiful union of the arts and letters which found in Greece, during contemporary and later days, a perfection of detail and a consummate working of available means to desirable ends, which all succeeding time must recognize as more thoroughly harmonious, in the sense of combining all departments of human labor to produce effective results, than any which preceded them. Pythagoras was the originator of those ideas of harmony which, tested by vibrations produced by the mathematical divisions of a string, have no clearer foundation for the whole modern system of concords and discords than his simple theory. Laws and government, as well as the fine arts, and the customs of social life, seemed blended together for intelligent recognition by means of the chanted, intoned, or musical presentation of the leaders. We cannot look toward more remote Eastern or Asiatic nations for so magnificent results, nor indeed for any thing that deserves the name of music, as this word is now understood by the civilized European or American. Modern Asiatic music is unmitigated "confusion worse confounded." The musical succession did not proceed in that direction. The mantle of Greek scholarship and Etruscan art fell upon Rome. Homer walked with Virgil, Demosthenes with Cicero, Pythagoras with Seneca. Subsequently, the Christian bishop linked the logic of Aristotle and the philosophy of Socrates and Plato with the Pentateuch and the prophecies of the elder dispensation, and sang without unrest his love of Christ in Latin lines surmounted with Greek letters, to denote the rising and the falling inflections. St. Ambrose, bishop of Milan (A. D. 386) composed many hymns; and the tradition of a majority of the western European churches assigns the authorship of the *Te Deum* to his pen, lovingly memorizing that St. Ambrose and St. Augustine chanted it antiphonally at the baptism of the latter. This statement does not assume the certainty of an historic fact; but there is no doubt that St. Ambrose improved the church music of his day by adopting the four authentic modes founded upon the Greek tetrachords. The Ambrosian chant continued to be used as the music for the hymns and doxologies of the church for more than two hundred years, until St. Gregory added four more, thus completing what have since been known as the Eight Gregorian Tones. Thirteen hundred years have only served to make the Gregorian Tones as acceptable as they were in the earlier ages of the church. The reason is obvious. Whether it be the Greek, the Latin, or the Anglican service, intoning can be more distinctly heard than ordinary speaking; and, therefore, it is more effective to large auditories. The vehicle, or agreeable musical sounds, employed for this purpose, must necessarily move within a limited compass, so that the celebrant, of either bass or tenor voice, can render the service acceptably. The Eight Gregorian Tones contain all the variety of melody and pitch suitable for this purpose; and priest, choir, and people can all participate in the service, by using these ancient chants, without extraordinary effort, if only the gift of a correct ear be vouchsafed them. The Anglican Church has a rich and beautiful variety of single chants founded directly upon the Gregorian Tones, and, during the past thirty years, has used them more generally than at any period since the Reformation.—St. Gregory's pontificate was also distinguished musically, by the erection of the organ, as the permanent musical instrument of the church. Its origin, according to some writers, was the syrinx, or Pandean pipes; although others mention as a fact that Ctesiphon, six hundred years before Christ, constructed a plain, rude "chest of whistles", with water as the motive power for the supply of wind. Not until St. Gregory's day, however, did it assume proportions sufficiently dignified to take its place as the combined orchestral support of the music of the church, so far as wind blown through pipes could make it orchestral. It never can yield the intense, penetrating tone of the violins and other stringed instruments, by reason of the difference in the application of the motive power. On the other hand, it approaches more nearly the tone of the human voice; and organ-builders and organists are vying with each other in developing its latest achievement, the *vox humana*, to a degree so near to perfection in the beautiful, that some have ventured to pronounce it angelic and heavenly. —The history of *concords* and *discords* as employed in music,—in other words, the origin of the whole system of modern *harmony*, may be said to date from the use of the organ in the church. Not until the pressing of one key with another, producing the pure harmony of thirds, or sixths, did the idea of a science of concords and discords, remotely outlined a thousand years before, present itself to the human mind through the tympanum of the human ear, acted upon by the living, breathing tones that came from the pipes of an organ. Thenceforth, music began to assume the aspect and proportions of a positive language. But the progress was slow. After St. Gregory, ten parallel lines were used instead of one, to denote the ascent and descent of the musical phrase; and points on the lines only, opposite to each other, were used to represent the agreement of the parts with each other. Hence the term *counterpoint*. The *staff* was afterward reduced to five lines, and the spaces were used as well, through the teaching of Guido d'Arezzo, a monk of the 11th century, who must be credited also with the establishment of the gamut, or scale, through the use of the syllables *Ut*, *Re*, *Mi*, *Fa*, *Sol*, *La*, *Si*, selected from Latin words in honor of the apostle John.—A period of two centuries followed, in which, according to Dr. Rimbault, no remnants or records of secular music can be found, except those of the Troubadours. These *Provençal* minstrels served to increase both the fancy and the language of Dante, Petrarch, and other Tuscan poets, in the 13th and 14th centuries. Little variety of notation appears, and no time is marked in their productions, yet it is not difficult to discover in them germs of the future melodies, as well as the poetry, of France and Italy. The stanza and the rhyme crept into the church also; and the trochaic measure generally prevailed, by reason of the boldness of the accent at the commencement of the lines, and by reason also of the inherent superiority of twofold over threefold measure. The Latin hymns, *Dies Iræ* and *Stabat Mater*, are well-known examples of this. The harmonies of the church music and of the secular, thus far, had been entirely founded upon pure concords, save an occasional mild discord by suspension. The union of this sweet harmony with quaint and charming rhythmical devices resulted in the construction of a form of composition, the *madrigal*, than which nothing more satisfactory for human voices has yet been heard. Roger North's history of the rise, development, and decline of this delightful music is one of the most interesting contributions to English musical literature which the art-student can possess. In Italy, it rose with Tasso; and in England, with Spenser and Shakespeare, and the grand galaxy of poets and authors who have shed immortal luster upon the reign of Queen Elizabeth. And it declined with them. Although immense strides in variety of harmonic progression have been taken since these lovely idyls were composed; although Palestrina, Pergolesi, Scarlatti, Bach, Handel, Haydn, Mozart, Beethoven, and Mendelssohn have left immortal works which can hardly be equaled, and can never be excelled; although Liszt, Wagner, and Rubinstein have written as representative composers of a school of music founded upon sudden and strange transitions and ear-splitting discords; yet the madrigal of the 16th and 17th centuries remains a living, breathing, visible proof that the truest, sweetest, most permanent progressions in vocal harmony are those which recognize this fundamental axiom as a necessity; namely, that *concords are the rule, and discords are the exception*. And here, again, the Church is the source of the harmony employed in constructing the madrigal. One need not examine long without a thorough conviction of this fact. Compare the harmony of Palestrina's church music with that of the earliest madrigal composers, and the origin of the latter is apparent. The difference lies not so much in the harmonic progression, as in the words and the cunning rhythmic flow.—With the Reformation, came the choral, the people's congregational song. And here stands out

Martin Luther, who as singer and musician, as well as theologian and preacher, exerted an influence second to none in his day. From the time when, as a boy, he sang the song of the Virgin and the birth of Christ in Madam Cotta's house, to the day of his death, at the age of sixty-four, he ceased not to encourage the cultivation of this beautiful art, in the family, in the parish school, in the church, in the social gathering, and in the united conferences of the churches. Every-where the people's congregational song, the choral, was used to arouse, to animate, to incite to new and enduring effort in fighting the battle of life. That this view of the important part which Luther and his music bore in that terrible religious struggle is shared by impartial judges, will be obvious to the student of music who examines the treatment of Luther's grand old choral, *Eine feste Burg ist unser Gott*, by Meyerbeer in his opera, *The Huguenots*, which is the deliberate and admiring testimony of a Hebrew who has composed the most elaborate operas of modern times. German scholars truthfully refer to the examples of Luther and Melanchthon as pioneers in the cause of religion, literature, and art, in modern Germany; and musicians can certainly point to Luther's establishment of the study and practice of music in his native land as the particular cause of the nearly general and complete musical intelligence of that people in modern times.—Germany, England, and America may be said to constitute a triple alliance for the preservation and perpetuation of the choral. It was the sacred song that came to this country with the pilgrims of New England, with the Hollanders of New Amsterdam, and with the loyalists of Maryland and Virginia. Events which transpired previous to and during the Revolutionary war quickened and invigorated its rhythmic pace, as we see and feel when we sing *Old Coronation*; but it is so strongly intrenched within the hearts of the people, that wars cannot silence its perpetual vibrations, nor misfortune and disaster impede its steady, irresistible course. Innovations, in the shape of rhythmic irregularities and too extended melodic compass, may occasionally mar its stately proportions; but it finally returns to its original and permanent form, one note to each syllable of words, supported by a pure, chaste harmony of concords. He who softened and elaborated the choral until it became to the ear what a picture of ever varying tints is to the eye, was Johann Sebastian Bach, a tower of musical strength to his own and to every other civilized land. Of all who have striven to preserve a lofty and enduring style, in the musical treatment of sacred subjects, none occupies higher ground than does this modern king of harmony and the organ. It is impossible to review the state of music during the latter part of the 17th and the beginning of the 18th century, without recognizing in almost superlative terms his claims to the most genuine and unbounded admiration. From single air and accompaniment, through movements of two, three, four, five, six, eight, and even twenty-two parts, this tireless musician spent fifty years of continuous labor for the pleasure and instruction of his sons and the circle in which he moved. Originally of a musical family, he commenced his active life with the fullest preparation for his work; and never did he falter for a moment in considering his efforts as little less than a divine duty. Not all of his manuscripts have yet been published; and a new and deep interest has, of late, been developed in every thing that emanated from his prolific brain and pen.—This new and larger liberty, ushered in by the Reformation, appeared in the masses of the Roman Catholic Church, and in the services of the Anglican Church. Composers have generally been willing to adapt themselves to the musical exigencies of the occasion. When, under the *régime* of pope, bishop, or stalwart reformer, the boy and the man singer could be confined to the Gregorian Tones, the strict canon and fugue, and the dignified choral, the music was certainly irreproachable in form, the effect was direct and strong, and the people were satisfied. When, in the course of time, the ecclesiastical *régime* became less rigid; when composers were less tied to strict contrapuntal effect; and when, especially, the female voice was permitted to take part in the separate musical services of the sanctuary, then, indeed, the church music, and all other kinds of music felt the force of the new influence. The beautiful masses of Haydn, Mozart, and their successors, give evidence, as Geo. Hogarth remarks, of the melodic and rhythmic changes which have been named; but, it may be questioned whether, with all the grace and symmetry which these compositions possess, they can excel the Gregorian Tones in simplicity, strength, and directness, or in permanency of effect.

After the Gregorian Tones, the canon, the fugue, and the choral, associated with the services, liturgical, psalmodic, and hymnic, of the Church, arose a new combination, dating from the *mysteries*, or portions of biblical narrations in dramatic and musical form. These were presented for the contemplation of the faithful, with the brilliant accessories of costume, scenery, and instrumentation. This seems to have been the thought which moved the religious teachers of the 17th and 18th centuries: since those who were to be instructed in religious knowledge could not see Moses, and Joshua, and Samuel and the prophets, and David, and Solomon, and the apostles, in their living visible forms, what more proper than that their young imaginations and memories should be assisted with the next most obvious and most effective instrumentality? Poesy lent her inexhaustible attraction to the scene; and music, that is, poetry sung, fired the emotions with an ardor and an inspiration that reached to heaven. Costume and scenery, in the secular musical drama, the opera, were added to make this new development in music more natural and picturesque; while the religious drama, the *oratorio*, was content to appear in a certain lofty and spiritual attitude without these adjuncts. The opera indulged in melodic flights which dazzled and bewildered — a consistent musical reflection of the wild license of most of its *libretti;* but the oratorio could not depart from the truth of sacred history, nor could it allow those fantastic flights of melody and rhythm, which characterized the opera. Now appeared the man who succeeded in reconciling these apparently antagonistic elements of the two styles. George Frederick Handel was thoroughly familiar with the operatic school of his day. He was violinist, pianist, organist, and operatic composer, when he attempted this bold experiment. Depressed by the competition of his contemporary Italian enemies, and even neglected by his former royal and noble friends, this great musician, whom Beethoven called "the musical father of us all," deliberately proposed and carried out the plan of appropriating all that was then worthy of being preserved of the free style of music, and combined with it the stricter forms to give it a solidity and character which could be obtained in no other way. Nothing daunted by the cold and indifferent reception which he at first met with, he continued to work on until he achieved an entire success. No one who has studied and heard his *Israel in Egypt* and his *Messiah* can doubt the reason of his triumph. Haydn, Mozart, Beethoven, Neukomm, Spohr, and Mendelssohn have left verbal, and above all, written musical testimony of their admiration for him; and succeeding students of music continue to swell the number of his devoted disciples. Haydn, Mozart, and Mendelssohn should probably be placed next in the order of composers of the first rank. In the United States, during the first fifty years after the establishment of the national independence of the country, attention was chiefly given to the study of the simpler forms of psalmody, and to the appropriation of whatsoever of European melody could be made to subserve a local or temporary purpose. Music, during the second fifty years of the century, has signally advanced as an art; but as a science, except in a few localities, it has made little progress. Musical instruments of all kinds have been improved, from a piccolo flute to a hundred thousand dollar organ; but this improvement by no means implies that a knowledge of the harmony which lies at the foundation of both vocal and instrumental music has correspondingly advanced. How many can write in strict two-part, three-part, and four-part harmony? How many can write the four-part harmony for the quartet of strings lying at the base of orchestral work? How many can write in chaste, pure, and simple harmony for four mixed voices? Rather, it is suspected and even asserted, that the number of good readers of vocal music, taking into consideration our larger population as compared with that of fifty years ago, is less in proportion than it was at that time. The multiplication of pianos, melodeons, and other instruments has tended to produce this result. There is, therefore, the greater necessity for systematic instruction in schools and families, whereby the rising generation may be so drilled in exercises on the scale, in a knowledge of the key-notes, the relationship of the keys, the various signs of notation, and the fundamental rules of harmony, that they may be able to sing, that is, to read music, with or without an instrument.

Musical Education. — From the preceding sketch of the general history and advancement of music in the church, on the rostrum, and in the family, the transition to the systematic music school or conservatory of music, is natural and easy. This institution had an earlier foundation than is generally supposed. Originally designed as a high learning hall for music, in which young and inexperienced persons were built up in musical knowledge, the name shows the object of such an institution—to cultivate, and to preserve in their purity, the science and the art of music. The entire contrivance of this sort of music school sprung from Italy, where the greater part of the charitable institutions of an earlier time were located; and the Italian nation, before all others, had, in that respect, the formation of an almost infinite number of artists and art-inspiring nestling-places, and diffused very generally sweet songs, the whole land, indeed, rejoicing in the cultivation and possession of good music. The oldest conservatories were frequently associated with hospital and orphan asylums, through the contributions of private persons supporting pious establishments, whereby the musically-gifted scholars, boys and girls, were distinguished, and enjoyed free lodging, board, and clothing, as well as instruction, partly in singing, and partly in instrumental music. Boarding scholars were associated for the payment of fees toward supporting the establishment; but boys and girls were not indiscriminately received into the house. The oldest and most renowned, and, at the same time, the pattern of all others, was that founded in Naples, by a Spanish clergyman named Giovanni di Tappia, in 1537, called *Conservatorio Santa Maria di Loretto.* This conservatory became, in succession, the foundation of three others, afterward established in Naples, for the exclusive use of boys. Leo, Durante, Scarlatti, Porpora, and others, were here, in course of time, instructors; Piccini, Sacchini, Cimarosa, Guglielmi, Anfossi, Paisiello, and others, fellow-teachers. Next to these, the more advanced scholars of Tappia's Institute established gradually the *Conservatorio San Onofrio*, later, the *Conservatorio della Pietà*, and lastly, in 1589, the *Conservatorio dei Poveri di Gesù Cristo*, in which last-named Durante was chapel-master, about 1715 or 1718, and which continued until within a short time since. Burney (*General History of Music*, 1789) gives a detailed account of these conservatories, showing that the first had 90, the second, 120, and the third, 300 scholars; and the fourth was extinct. Each of these three establishments had thirty laws, and stood under the direction of two guardians, who severally bore the title of High Chapel-Master; and of the two, one examined and corrected the compositions of the scholars, and the other gave lessons and superintended the singing. From these scholars, were chosen teachers, with the title of *maestri scolari*, to assist in instruction upon instruments. The general call was only for pupils from 8 to 20 years of age; and the time that each one, for himself or for herself, *must swear to remain* was firmly fixed at eight years for the younger members. Meanwhile, if a member exhibited aught of a different kind of talent, he was quickly accommodated with a chance in his new capacity. During the political inquietude of 1789, the conservatories of *Loretto*, *Onofrio*, and *Pietà* were reduced to one, which, in 1813, was called the *Real Collegio di Musica*; and, in 1818, was removed to the former nunnery of *San Sebastiano*. The director of this institution, from 1861 to his death, in 1870, was the blind, but highly and deservedly distinguished, Saverio Mercadante; and, in his place, Lauro Rossi, from the conservatory of Milan, was appointed in 1871.—In Venice, are found four conservatories, established upon a basis similar to those in Naples, which, in their time, have been very celebrated for their education of girls, who, through the rigid standard and ordinary usages of those institutions, became often wedded to them for life. The names of these four conservatories are, *Ospedale della Pietà*, *de' Mendicanti*, *degl' Incurabili*, and *Ospedaletto di San Giovanni e Paolo*. Burney, in his history, and Mayer, in his description of Venice, relate the following details in regard to these institutions. Immediately upon being placed in them, pupils were instructed in singing, and in playing upon all kinds of instruments, by the best masters. A chapel-master controlled the higher conduct of the institute; and, on each Sunday, was prepared a public *music offering*. These gatherings for song were heightened and enriched by accompaniments upon instruments, in which the pupils all joined. In connection with the varied and beautiful effects thus produced, many voices, not decayed and worn out but fresh and pure, were constantly developed and firmly built up. The result was the continued binding together of a large company of brilliant amateurs and connoisseurs. All other conservatories in Italy are of a comparatively recent date. The most important among the latter is that of 1809, founded by the viceroy Eugene, in Milan, of which the first director was Bonifazio Asioli; and which, in 1872, remained under the guidance of Prof. A. Muzzucato. Against the decay which has come upon more or less of the Italian conservatories of music, there has recently been inaugurated an effective check. A commission of experienced musicians was recognized by the minister of instruction, in May, 1871. This commission was organized under the presidency of G. Verdi, and offered as the result of their consultations a memorandum with proposals for reform. This reform is already producing a practical and visible effect. The conservatory of Milan bestowed upon this movement toward reform the character of an international influence, while that of Naples supported it rather as a strictly national effort. The most brilliant and artistic musical institution, either of old or modern time, is the Conservatory of Paris, which, in regular order, secured the presence of artists of the first rank. The want of a preparatory school for singers had been felt and indicated by the *Grand Opéra*; and through its elevating influence, a first institute for musical instruction was started, which, under the particular protection of the Baron de Breteuil, in 1784, was denominated *L'école royale de chant et de déclamation*. But in successive years, and through the want of instrumental musicians in the fourteen French army corps, a meeting was held in Nov., 1793, at which it was decreed that the primary establishment already alluded to should be enlarged, and, by union with the instrumentalists in 1795, should be entitled the *Conservatoire de musique*. The yearly expense, about 240,000 francs, was fully pledged, and the number of teachers was fixed at 115. Pupils were admitted from the age of ten to twenty years, the number of whom rose to 600, their social condition being that of comparative poverty. Notwithstanding these certain signs of practical usefulness, the raising of a special sum of 100,000 francs, in 1802, seemed doubtful, and the number of teachers and scholars became limited. Napoleon I. had already, in 1803, presented the conservatory with richer appropriations, and these he confirmed and extended on being raised to the imperial power. Following the new *régime*, children's schools were permitted to be established, in which gratuitous musical instruction was imparted. Subsequently, the Bourbons withdrew the greater part of their contributions, and the fate of the conservatory was inextricably interwoven with all of the old dismal forebodings of those eventful days; but these temporary obstructions could not impede the steady advancement of this noble school of music; and it remains, to this day, what it ever has been, the most brilliantly artistic preparatory musical establishment in the world. Its first director was Sarette, who had received the largest reward in its organization; and with this also the excellent idea of the accomplishment and extension of the preparations toward making it a national institution. With him were associated, for the formation and execution of the new plan, five other members of the administration; namely, the secretary, the *chef du materiel*, the cashier, the librarian, and the board inspector, who altogether were required to be scientific musicians, and distinguished through the approbation of the national Art Society. In the year 1800, these positions were filled by Cherubini (afterward director until his death, in 1842), Gossec, Méhul, Martini, and Le Sueur. Of other celebrated directors and instructors, who, in course of time, have gone forth from it, were, Gossec, Garat, Paer, Baillot, Berlioz, Rode, Kreutzer, L. Romberg, Tulon, Habeneck, Catel, Caraffa, Halevy, Choron, Plantade, Bordogni, and others. The successor of Cherubini was Auber; and, in 1871, director Ambroise Thomas followed, who, through a special leadership in musical history, esthetics, acoustics, and preparatory studies, had justly acquired merit. Forty-four classes of male pupils were generally instructed in every style of composition, upon subjects appertaining to all kinds of practical music, in singing, in playing upon instruments, in declamation, the French language, and stage manner, or carriage; twenty-two classes of female pupils received instruction in enunciation, harmony, piano-playing, accompaniment, stage carriage, and declamation. In preparing for study, it is an indispensable stipulation that pupils begin at the beginning. The course commences on the 1st or 2d of October in each year. Four grand yearly examinations are appointed,—in January, April, July, and the middle of October, at which the minister of instruction and female artists are present. By the middle of July, a concourse stand for the first prize in composition, the distribution of the prize following in November, at the Opera House. Whoever obtains the first prize, next publicly directs his work with a grand orchestra, and is called the *laurel-winner*, being solemnly crowned. In almost all the departments of music, this conservatory achieves careful and diligent developments, the most trustworthy text-books and appropriate methods being thoroughly used, as the whole continent of Europe is made constantly to contribute to its success in these respects. The institution is, at the same time, the chief point of union for all European lovers of magnificent musical effects; while the yearly public exercises of its pupils, 14 and sometimes 20 in number, beginning in October and continuing through the entire winter, including the moderate performances of Sunday evening, altogether confer upon these dazzling concerts of Paris the praise and the fame which are unexceptionally conceded to them. Seven of the already named children's schools of the Parisian Conservatory are established in Dijon, Lille, Lyons, Marseilles, Nantes, Rouen, and Toulouse. Strasbourg had, up to the time of the Franco-German war, an independent town-like conservatory, conducted till 1870 by Hasselmans; the same was, in 1871, resuscitated, and carried on by director Franz Stockhausen. After the example of the Parisian *Conservatoire*, was renovated the conservatory in Madrid, in 1831; but in circumscribed compass, though with judicious powers. Music and declamation were taught under its first director, an Italian singing-master by the name of Francesco Piermarini; but the present director is Emilio Arrieta. This school has suffered through the political fluctuations of late years, and by continued disadvantageous animadversions; but it now appears in its own proper strength, having received the favor of the late king Amadeus, offering an important barrier against decline. Likewise, after the example of the French, four Belgian conservatories, those of Brussels, Liege, Antwerp, and Ghent, are established, of which the first two are entirely sustained by state means and are royal institutions; the third subsists by contributions only; while that of Ghent is simply a town institute. In connection with the Conservatory of Brussels, reference should be made to the labors of Director Fétis, whose earnest and useful service was continued from 1838 until his death, in 1871. The conservatory in Liege, although limited in its *matériel*, is yet constantly advancing to a higher rank through additional musicians, instruments, and musical means, together with the aspiring ideals and activities of the directors Daussoigne-Méhul and Soubre; and it rejoices in having for its foundation-plan of study the works of the grand masters in harmony, Bach and Handel, who in Brussels are sufficiently ignored; the instructing power in Liege also throws the Brussels conservatory quite into the shade. The attendance of scholars is fully 1000. A highly honorable reputation, long known in Germany, and worthily appreciated not simply in Belgium but throughout the entire art-world, attaches to the conservatory of Antwerp. Here Director Pierre Bénoit flourished. This bold, out-spoken man, alike teacher, composer, and director, assumed a position so impregnable in right, and showed a faith so dauntless, that he is entitled to the sincerest admiration. Said he, "Music is the most perfect national speech; in it, all civilized races find their fullest and most enjoyable impressions; and a music-school should be like unto a temple in the father-land". These principles have been realized with energy, and have secured, in the conservatory of Antwerp, a signification so general and so important, that they constitute a central influence in the political and intellectual regeneration of the country. The name of Bénoit has a familiar, popular ring in the ears of at least two and a half millions of Belgians, conveying to his disciples a certain lofty inspiration, which is self-supporting, and by association is communicated to the towns and cities of the Flemish lands.—The kingdom of the Netherlands possesses many excellent music-schools of their kind; but the name of its conservatory only can be mentioned—the institution in Rotterdam, conducted by W. Bargiel, since 1865. There is also a conservatory in Luxemburg, founded in 1864, and since then directed by E. Zinnen. Both of these establishments have raised themselves to a high and noteworthy position.

The most celebrated Austrian conservatory is that in Prague; the most munificent in organization, and the best in other respects, is that of Vienna. In the year 1808, it occurred to some high-minded patron of music, formerly flourishing in Bohemia, to develop the depressed art of music, and to supply the want of intelligent orchestral players; the resolution required that an academy should be founded in Prague, of which the essential features should be elaborate instrumental effects, combined with a universal, artistic, and humanitary knowledge. The Prague conservatory was celebrated throughout Europe; the singing-school, too, in this institution, both for concert and for opera, begins to show satisfactory results. In the year 1871, the school had 137 pupils, 129 of whom were Bohemians; of this number 14 were singing scholars, and 123 instrumentalists, the latter divided into 61, in the lower, and 62, in the upper division. The Austrian minister of instruction included in the finance budget a yearly appropriation of three thousand florins for the conservatory in Vienna; and this sum was raised to ten thousand florins by the house of deputies, and immediately approved by the house of peers. The conservatory in Vienna is a creation of the Society of Music Friends, in the Austro-Hungarian Monarchy, growing out of the simple beginnings of a singing-school, in the year 1816; but, since 1869, it has developed into very comprehensive and brilliant surroundings through the noble principles upon which it was organized. The artistic director of the institution (in 1876, Jos. Hellmesberger) is assisted by 35 instructors in the musical departments, accompanying whom are lecturers upon the history of music, on oral discourse, declamation, esthetics, the history of literature, the Italian language, mimics, and the dance. The establishment possesses a theater for drilling purposes, and was attended, in the year 1871, by 445 scholars, of whom 225 were males, and 220 females.—With a lofty and stirring splendor, made familiar and exercised at a memorial to the king of Bavaria, Richard Wagner presented his course of teaching, under the auspices of the royal conservatory, in Munich, October, 1865, upon the ground of a previous re-organization of his own. This institution is the only German establishment for teaching the science and art of music not endowed by state appropriations; but it is placed under the direction of a court musical superintendent. The conservatory in Munich is divided into three chief departments, with relative individual subdivisions, each having its own assigned work. These chief departments are, the singing, the instrumental, and the theoretic. At the head of the singing-school stands the professor of solo-singing; at the head of the instrumental school, likewise a professor, who is also the chief of the piano or the violin. The particular *ensemble* drilling of the singers, on the one side, or of the instrumentalists, on the other, was conducted by both of these professors; while the control of the *ensemble* drilling of all the pupils became the duty of the chief director. In those general studies, as well as in the previously mentioned particular *ensemble* studies, the scholars were enabled, at the same time, to obtain a methodical, practical guidance to the *technique* of the directors. In the theoretic department, a professor of counterpoint, and a professor of music-history worked independently. Near these four professors, are also the following exponents of the teaching force: in the singing-school, a teacher of solo-singing, an assistant teacher of chorus-singing, and a teacher of rhetoric and mimics; in the instrumental school, a teacher and an assistant teacher for the four instruments of percussion, and a teacher of organ-playing; in the theoretic school, a teacher of harmony. So excellent and complete in all respects was this organization, and so did it continue to be, as long as Hans von Bülow, from 1866 to 1868, retained the position of its guide and director. After his departure, the institution fell, more and more behind its former acknowledged development, the attendance having considerably diminished. In Würtzburg, there is also a royal conservatory, founded by Fröhlich, and led by Bratsch.—The conservatory at Stuttgart is under the protection of the king of Würtemberg, and has just claims to superior merit in its devotion to classic German music. Under the name of the Stuttgart Music School, it was founded, in the autumn of 1856, by Siegmund Lebert of Stuttgart, in conjunction with Dr. Brachmann and Ed. Laiblin of Riga, and called a conservatory in 1865. This institution has two divisions,—an artists' and an amateurs' school. The departments of instruction are confined to elementary, choral, and solo singing; piano, organ, violin, and violoncello playing; composition, esthetics, musical history, and the Italian language. Frankfort on the Main has a music school, built in 1860, and approved by the state, at the head of which stands its first director, Heinrich Henkel. The most celebrated music school of northern Germany is that in Leipsic, established upon Easter-day, 1843, under the protection and contributions of the king of Saxony, and under the co-operation of Felix Mendelssohn-Bartholdy. It stood at the summit of its splendor, with Mendelssohn, Moscheles, Hauptmann, Richter, Ferd. David, Klengel, Plaidy, etc., as instructors; and its scholars steadily streamed out upon all European and American lands. The instruction extends theoretically and practically over all the branches of music, scientific and artistic. The theoretic instruction embraces harmony doctrine, forms and composition, partition playing, leading or directing, the Italian language, and the history and esthetics of music, combined in one complete course of musical theory and the art of composition, which was finished by male scholars in three, and by female scholars in two years. The practical instruction, and the improvement in mechanical skill, extended over singing and instrumental playing, by preference over the piano, organ, violin, viola, violoncello in quartet, and solo playing with accompaniment. In Dresden, stands a conservatory founded and directed by Pudor, which, for nearly twenty years, has exhibited good results, and which, more particularly in the instruction upon orchestral instruments, imparted by the able members of the royal Saxon court chapel, is even highly distinguished.—The Prussian kingdom possesses only two local conservatories,—those of Cologne and Berlin. The conservatory in Cologne was opened on Easter-day, in 1850, and remains, up to the present time, under the direction of the city chapel-master, Dr. Ferdinand Hiller. Some of the most prominent among young German composers, up to the present time, have gone forth from the halls of this institution. The instructors formed, in 1869, a joint musical association, having for its main object the development of a powerful music life on the Rhine; and, for this purpose, an equal regard for other districts than their own, inspired them in the production of their subsequent compositions. In Berlin, exists another conservatory, founded by J. Stern, A. B. Marx, and Th. Kullak, at present directed by the first-named; out of its branches, was formed the new academy of music, of which Th. Kullak is the director. In 1869, by means of the minister of instruction, and in close connection with the royal academy of arts, a royal high school was founded, for exercise in the art of music, in Berlin. Beside the director, stands the celebrated violin virtuoso, professor Joachim. In this institution, still in the introductory phases of development, the violin school is quoted as among the best; while care is taken in all the other branches of high musical instruction, except perhaps piano playing, preparation for which is quite insufficient.—Switzerland possesses high music schools, in Berne and Geneva.—England has a royal institution in London, formerly directed by Cipriani Potter, but more recently by Sterndale Bennett, of which MacFarren is the most distinguished graduate. There are also conservatories in Edinburgh and Dublin.—Copenhagen also has a conservatory; and, since 1865, there is one even in Christiania, while the royal musical academy in Stockholm is already a new development. In the remaining parts of Europe are still to be named the conservatory in Warsaw, founded, in 1821, by Elsner, and further directed by A. Kontski, and then by Moniusczko with imperial assistance; and also conservatories in Klausenburg, Pesth, and Lisbon.—In the Russian empire, both in St. Petersburg and in Moscow, are conservatories, founded by the Grand-Duchess Helen. These have an excellent foundation, and are liberally supported. The elder, in St. Petersburg, was successively directed by Anton Rubinstein, by Zaremba, and by Assantschewsky; and that in Moscow, by Nicholas Rubinstein.

In the United States, conservatories are, almost without exception, private speculations, and, as compared with similar efforts in Europe, neither in management nor in performances, can venture to compete with the elder institutions. New York possesses many of these; also Baltimore, Boston, Buffalo, Cincinnati, Chicago, St. Louis, Philadelphia, and other cities. In justice to these American efforts, however, it must be stated that, as government, in the United States, whether national, state, or municipal, makes no appropriation for conservatories of music, these enterprises, at present, must necessarily be private ones; and the instruction in music, chiefly elementary vocal, and elementary piano playing. Advanced pupils are occasionally found, who have made considerable progress in both of these departments. Doubtless, a better day is dawning for the real lovers of the higher styles of music, since a proposition has been made to establish and munificently endow a musical college for young women in the city of New York, which would be, from many points of view, a highly useful, benevolent, and art-elevating institution. In succeeding days, the state may possibly step in to secure a systematic course of musical instruction for her children, and thus rescue this noble science and art from many of the prolific causes of superficiality, perverted tastes, and degrading associations, ultimately producing a complete indifference to the higher claims of music.

Of the methods employed in the European music schools, it can confidently be said that they differ as much from each other, in their working details, as the literary, scientific, and higher professional and special institutions do in the presentation of the important subjects brought under their notice. Differences arising from climate, age, precocity, natural aptitude, early opportunities, physical organization, and association with intelligent persons of artistic, genial, and mobile tendencies, display themselves in no department of human labor more frequently, or with more prominent demonstrations of enthusiasm, than among the lovers and students of music. But, whatever may be the difference of details in the methods employed, or, however great may be the disparity arising from the other causes named, these music schools, without exception, agree in selecting the plastic and impressible age of youth, and often very early and tender youth, as the heaven-appointed time when eye, ear, hand, and voice must simultaneously begin their never-ending work of cultivation. The early lives of celebrated musicians, the moderate success of those inclined to mediocrity, and even the more feeble attempts of those who have learned to play and sing but little, are a standing proof that, to achieve any audible or distinguishable result in music, the child must commence at its mother's knee to lisp the melody that shall perpetually link the memory of these child-like efforts to the maturer accomplishments of a later season. The Christian Church has never been unfaithful to herself or to her cause in this important matter. As one of the results of her ministrations, has sprung not only the music especially adapted to the purposes of divine worship, but the very first and highly successful plan of a systematic music school worthy of a name and of historical record. Giovanni di Tappia should be gratefully remembered by every musician, as well as by every one interested in musical progress, for it was he who took the girl with her naturally flexible voice, and the boy with his inflexible voice, and led them by degrees to pass from the unisonant rendering of the Gregorian Tones to part-singing in the lofty counterpoint of Palestrina. Although a hundred years had elapsed before the lovely and more emotional voice of the mature woman was permitted to be heard in public, and in the services of the sanctuary; and although its use is still denied by many ecclesiastics in the Greek, Roman, and Anglican communions, yet it must be conceded that it should be trained, at first, in the parish schools and Sunday-schools, which are the musical nurseries of the church, and from which pupils pass into the choir by a very natural and easy way. No music teachers are so successful as they who have the religious sympathy and co-operation of the parents; and no pupils render more effective music than they who, to intelligent reading and a certain degree of cultivation, unite the higher merit of believing in the truth of the words they utter. But even where the religious idea is not so apparent, or where it may not be required and insisted upon, as in the case of the children's schools, in which gratuitous musical instruction was given as a preparation for entrance into the grand conservatory at Paris, or in the common schools of the United States, where music, in cities of considerable size, is taught gratuitously, there exists the imperative necessity that it be commenced in the primary departments, where the faith and implicit obedience of the child make the study and practice of vocal music a delight instead of a task. A limited and stipulated portion of the ordinary semi-annual term, of about five months, can be spent in tri-weekly exercises upon the scale, including melodies of limited compass, which is simply oral and imitative work on the part of the teacher and scholar, preparatory to the introduction of the musical sign-language during the second five months of the year. Two grades are thus created in the primary departments,—the oral, which is purely imitative, through the ear, and the oral-written, which is the union of the oral with the eye-knowledge of the musical sign-language. In vocal compass, these exercises must be limited, either ascending or descending, and in expression without forced or blatant effect, to modify which at least four vowel sounds, *ah*, *ee*, *oh*, and *oo* may be used; but, in rhythmical variety and in change of key, they may be quite extended, depending upon the knowledge, skill, and tact of the teacher. Care must be taken that the young voice be not fatigued, and that boys especially be early taught to avoid carrying the chest tones too high. Three lessons of half an hour each during the week are more effective than two lessons of an hour each, to pupils under twelve years of age; and five lessons of twenty minutes each, during the week, are better than either. Beating time should accompany the written exercises in the second term of the primary departments; and, in the higher departments, the written exercises should be copied by the pupils for two years consecutively, with more extended practice in rhythm and melody, and plain singing in two and three parts. Drilling like this has been practiced in many of the schools of the United States during the past ten years; and the plan, if earnestly encouraged and carried out, will enable every pupil, of sufficient ear and age, to become a reader of plain music.—The place of music as a branch of *superior instruction* must also be referred to. The great universities of England—Oxford and Cambridge, do not teach music systematically; nor do they care where the musical student acquires his information; but they always have superior musicians to examine the musical aspirant, and these examinations are thorough and severe. In the United States, considerable progress has been made in this direction. Harvard University has always shown a commendable love of music in the amateur orchestral line, and in sundry vocal organizations; but not until 1871—2, was music established as an elective study by the faculty. The first year exhibited a class of 9 students, who devoted two lessons a week to an elective course in *harmony;* succeeding this, an elective course was added each year, until 1875—6, when there were five courses; namely, harmony, counterpoint, canon and free thematic music, fugue, and the history of music. The number of students has steadily increased year by year, until, in 1875—6, there were 32. The fact that this instruction is purely in the science and art of musical composition, and in musical history, and that the students in music who pursue this elective course are required to possess considerable preliminary knowledge and familiarity with the piano or organ, will account for the smallness of the number of students. Music is now, at Harvard, included among those studies for which honors are given at graduation. The degree of A. M. and Ph. D. are also open to bachelors of arts who pursue the required course, and pass the examination in music. For the degree of A. M., one year's exclusive study is required after graduation; for the degree of Ph. D., several years. Thus far, 2 graduates have taken the degree of A. M., in music, and will probably apply for the highest degree, that of Ph. D. The instruction in this department is given by J. K. Payne, author of the *Oratorio of St. Peter*. At Yale College, music is restricted to instruction in singing, for the purpose of obtaining good vocal music for morning and Sabbath-day devotions. For this object, Joseph Battell, in 1854, gave $5,000, the interest of which was to be devoted to this purpose. A chapel - master (Prof. G. J. Stoeckel) was then appointed, and services for male voices were introduced. In 1861, Mrs. Wm. A. Larned, a sister of Mr. Battell, gave the college $1,000, the interest of which was to be expended in the purchase of musical works. By this means, and by the donations of friends of the institution, a musical library has been formed. In 1862, Mrs. Larned donated to the college $5,000 for the support of a teacher of music. In 1874, after the death of Lowell Mason, his family gave the library of that well-known composer — comprising 8,000 titles — to the Yale Theological Seminary. In 1876, when the new Battell Chapel was supplied, through the munificence of Mrs. Larned, with a new organ, the old organ, after being repaired and enlarged, was transferred to Calliope Hall, which has been placed at the disposal of musical students of the college. A musical professorship has not yet, however, been established. — The College of Music of the Boston University (q. v.), which was organized in 1872, presents superior advantages for students of music. It admits only students having the average proficiency of graduates of American conservatories, and includes four regular courses. Many other American colleges contain musical departments as a part of the full curriculum. — For authorities on the history of music, and on musical science and composition, see Burney, *General History of Music* (1789); Hawkins, *A General History of the Science and Practice of Music* (new edit., London, 1853); Chappell, *The History of Music* (London, 1874); George Hogarth, *Musical History, etc.* (1836); H. Mendel, *Musikalisches Conversations-Lexicon* (Berlin, 1871); Callcott, *Musical Grammar* (1805); Albrechtsberger and Weber, *Course of Harmony*, in *Southard's Digest* (Boston, 1854); A. B. Marx, *Die Lehre von der musikalischen Composition* (Leipsic, 1834—45), Eng. trans. by Saroni (N.Y., 1852); and *Allgemeine Musiklehre* (1839). (See also Singing-Schools, and Voice Culture.)

MUTUAL SYSTEM. See Monitorial System.

NASHVILLE, UNIVERSITY OF, at Nashville, Tenn., was founded by the state of North Carolina, Dec. 29., 1785, as Davidson Academy. It became Cumberland College, and the University of Nashville, in 1826. It is an eleemosynary, self-perpetuating corporation, and is under the control of neither church nor state. In 1855, Montgomery Bell bequeathed to the institution a fund of $20,000. This now amounts to nearly $50,000; and endows a grammar school. In 1850, the medical college, then and now the only one in Tennessee, was organized. It is supported by tuition fees alone. In 1875, the collegiate department was suspended; and its grounds, buildings, and funds, appropriated to a normal college, under state countenance, and mainly supported by the Peabody education fund. Tuition is free for young women and young men alike. Twenty three acres and four large buildings, all within the city limits, constitute the property of the university, and are valued at about $150,000. The college fund is within a fraction of $50,000. The normal college closed its first session with 51 students. The medical college averages from 175 to 200 students, and has nearly 2,000 *alumni*. The normal college is the only first-class school of its description in a region occupying at least 800,000 square miles. The heads of the university have been as follows: James Priestly, LL. D., president, 1809—15; and again 1819—20; Philip Lindsley, D. D., president, 1824—50; John Berrien Lindsley, M. D., D.D., chancellor, 1855—70; Gen. Edmund Kirby Smith, 1870—75; Eben Sperry Stearns, D. D., appointed in 1875.

NATIONAL EDUCATION, or **State Education,** a system of education or schools, established by the state, for the benefit either of the whole people, or of a particular class. Civilized nations, in both ancient and modern times, have had systems of education for the instruction of the favored few; but it is only within the last three centuries that, in Europe or America, any thing like a properly organized system for educating the masses has existed. (See Education.) Germany, Scotland, and some of the states of the American Union, may claim precedence for putting into operation governmental schemes for general education, both elementary and advanced. Many other nations followed in their wake; and, at present, national education, to a greater or less extent, prevails in most civilized countries in the world. Among the Asiatic nations, the Chinese may claim great antiquity for their remarkable system of national education (see China); while the Japanese, in quite recent times, have exhibited a wonderful intelligence and energy in the establishment of state schools. (See Japan.) In England, notwithstanding the age of her great universities and public and endowed schools, there was no national system until recently. (See England.) For an account of the national systems in other countries and states, see the respective titles.

The importance of a national system of education is now generally conceded, as a corollary to the demonstrated benefit to a community of affording to each of its members at least an elementary school education. Herbert Spencer, indeed, has assailed these first principles, by denying the right of the state "to administer education, inasmuch as the taking away, by government, of more of a man's property than is needful for maintaining his rights, is an infringement of his rights, and, therefore, a reversal of the government's function toward him; and, inasmuch as the taking away of his property to educate his own or other people's children is not needful for the maintaining of his rights, the taking away of his property for such a purpose is wrong." Given the premises of this argument, and the conclusion is inevitable; but the premises are denied. School education, widely diffused, is held to be not only a benefit but a protection to the community; and just as it is proper for the state to enact laws to prevent crimes by punishment, taxing the citizens to support a penal system, so it is also proper to establish educational systems the general tendency of which, by cultivating the minds and improving the morals of the people, is to prevent crime, and thus erect a barrier against lawless violence, imperiling the welfare of the citizens in the enjoyment of their rights as such. The principle of national education has been attacked by asserting that school education does not greatly affect the character of those who receive it; while the community can only be benefited by improving individual character. The extent to which a national system of education affects character will, of course, vary with the kind of education imparted; but, certainly, the inefficiency of a bad system is no argument in favor of the abolition of all systems. "Although," says Morley, "effective instruction does not cover nor touch the whole field of character and conduct, it does most manifestly touch some portions of it. It adds, for instance, to the consciousness of power and faculty, and this increases the invaluable and far-reaching quality of self-respect. Hence, even if a great effort to provide our people with the instruments of knowledge did not reduce the number of criminals, it would still improve the tone of those who are not criminals."—But, as has been well said, school education, however excellent and however widely diffused, cannot prove, of itself, a panacea for all the ills of the social state. Education is much more than learning to "read, write, and cipher." "Whatever," says Mill, "helps to shape the human being—to make the individual what he is, or hinder him from being what he is not—is part of his education." Hence, there is an education of the home and family, the street, the workshop, the church, as well as that of the school; and, it is contended by some, that, as the influences which emanate from these are more potent than those of the school, the state should control these influences as well, or its system of education will be more or less nugatory. "Whatever," says Rigg, "be the merit and efficiency of the school teaching and training, whatever, also, the regularity of attendance (under, let us suppose, an effective compulsory law), it is certain that adverse home influences will, to a lamentable and most discouraging extent, counteract the good effects of school attendance." All this being admitted, the necessity of a thoroughly effective system of education by state schools, in order to diminish as much as possible the evil influences of home, street, etc., is still apparent. Giving merely the ability to read, in this age of books, is opening the portal to knowledge—elaborating, refining, ennobling, and thus to an enlightenment which often, if not always, leads to moral improvement. (See Illiteracy.) The need of adapting national education to the peculiar condition or institutions of the country in which it exists, is very generally recognized. Thus, in *A Statement of the Theory of Education in the U. S.* (Wash., 1874), it is said, "In order to compensate for lack of family nurture, the school is obliged to lay more stress upon discipline, and to make far more prominent the moral phase of education. It is obliged to train the pupil into habits of self-control in its various forms, in order that he may be prepared for a life wherein there is little police restraint on the part of the constituted authorities."—Other questions have also arisen in relation to national education, or the education afforded in national schools, as (1) Whether it should, to any extent, be on a religious basis, or should be exclusively secular; (2) Whether it should extend to higher education, or be confined to elementary instruction; and (3) Whether it should embrace technical and professional instruction, or not. In regard to these points, respectively, see Denominational Schools, High Schools, and Technical Education.—See also Spencer, *Social Statics* (N. Y., 1866); Rigg, *National Education* (London, 1873;) Morley, *The Struggle for National Education* (London, 1873).

NATIONAL LANGUAGE. There are but few among the civilized countries of the world in which all the people speak the same language. In most countries, two or more languages predominate in different districts. Thus, in Belgium, 50 per cent of the population speak Flemish; 42 per cent, French; and 8 per cent, Flemish, French, or German. In Switzerland, 69 per cent speak German; 24 per cent, French; 5½ per cent, Italian; and 1½ per cent, Romansch. In Prussia, 10 per cent of the population speak Polish; in Austria proper, the German language prevails in 7 of the 14 provinces; the Czechic, in 2; the Slovenic, in 1; the Croatian or Servian, in 1; and, in 3 provinces, no language is spoken by an absolute majority of the people. This mixture of languages is, in some instances, due to political events of comparatively recent date; such as the dismemberment of the kingdom of Poland, which placed large Polish-speaking countries under German and Russian rule; but, in most cases, the various languages have co-existed for centuries. Thus, the Celtic has been generally spoken in Wales, down to the present time, although the country has been for six centuries under English rule; and, in the center of Germany, a small Slavic tribe, the Wends, have for many centuries preserved their language, though they have all the time been politically united with Germany.—As long as the education of the bulk of the people was almost wholly conducted by the family and the church, the boundaries of the different languages of a country appear to have been remarkably steady; but, the extension of school education to all classes of the people, the progress of compulsory education, the more general participation of the people in political affairs, the introduction of universal suffrage, and especially the centralization of school legislation and the progress of the state or public school system, have in modern times worked a remarkable change. In selecting the language which was to serve as the medium of instruction, the difference between cultivated and uncultivated, literary and non-literary, ruling and subordinate languages, made itself greatly felt. When a language was spoken in a small district only, and was, at the same time, uncultivated and without a literature, it was natural that little or no attention should be given to it in the school, that the rising generation should look upon the national language as the more important, and, consequently, that the latter should steadily gain ground, and crowd out the subordinate languages. This process, during the last hundred years, has been in active operation. Thus, in England, the Cornish, the Celtic dialect of Cornwall, has become extinct within the remembrance of men now living. In Italy, the German dialect of two clusters of seven and thirteen communities, which had maintained itself for, at least, one thousand years, has at last given way to the Italian. In Germany, the linguistic territory of the Slavic Wends, who still comprise a population of about 140,000 persons, has been largely reduced within the last hundred years. The increasing strength, in modern times, of the principle of nationality, which has achieved its greatest triumphs in the establishment of a united Germany and a united Italy, has caused many governments to look upon the universal ascendency of the national language, and the suppression of all others, as a means of strengthening national unity. From this point of view, great efforts have been made in many countries, to force the exclusive use of the language of the government upon all schools, as the sole medium of instruction. Where these measures were directed against languages spoken by large bodies of the people, or even against smaller portions of the population, speaking the language of another large country, they have provoked resistance, more or less violent, and have in many instances led to controversies which are not yet ended. The principles according to which different governments have proceeded, are very different. None has gone so far in the use of force as Russia, which, in its attempts to crush out the language of some eight million Poles, has manifested a disregard of the first rights of families in the education of their children, that has deservedly met with universal disapproval. No country of the world has been so greatly embarrassed in its legislation by the co-existence of a number of languages, as the Austro-Hungarian Monarchy. The two ruling languages, German in Austria proper, and Magyar in the lands of the Hungarian crown, are both the languages of only a minority of the population in their several sections; and while the two governments have been anxious to extend the domain of the ruling languages, the Czechs in Bohemia and Moravia, the Slovens in Styria and Carniola, the Italians in the Tyrol, the Poles and Ruthenians in Galicia, Silesia, and the Bukovina, the Roumanians, Croats, and Germans in Hungary, have insisted that for the schools in those districts in which a majority of the people speak their language, it shall be made the medium of instruction of all grades. The conflict is at present fiercer than ever. The Hungarian government has thus far successfully continued its efforts to extend the ascendency of the Magyar language; while the government of Austria proper has conceded nearly all the demands of the non-German nationalities. The idea of an imperial language has, in Austria proper, been given up; and what remains of the ascendency of the German, is chiefly due to the great superiority of German literature and scholarship. The Czechs, Slovens, Poles, and other non-German nationalities, have not only secured the general introduction of their languages as mediums of instruction into all the primary schools of their districts; but the same has been done in regard to the gymnasia. The two universities of Lemberg and Cracow have been fully surrendered to the Poles; and, in Prague, the division of the university, the oldest in Germany, into two, one Czechic and one German, is under consideration.—The Prussian government, which sustains non-German schools in the provinces of Brandenburg, Silesia, Posen, Prussia, and the northern part of Schleswig, has devoted to the principles underlying this question a greater attention than any other European government, and has evidently endeavored to evolve principles which will admit of application in more than one country, and which will reconcile the clashing claims of the mother-tongue and the national language. It expressly disclaims any intention to introduce the study of German into the non-German schools for the sole purpose of Germanizing districts speaking a non-German language; but it demands, "for the purpose of securing in these parts and members of the monarchy a lively appreciation of the progress of civilization in the father-land, and a conscious and energetic co-operation in this progress, that the pupils of the national schools be instructed in the German language as far as is necessary to facilitate a business and social intercourse with their German-speaking fellow-citizens." Accordingly, in the purely Wendish, Polish, Lithuanian, and Masuric schools, the mother-tongue is used exclusively for instruction in religion and singing, and for the lower stages of instruction in reading, writing, and arithmetic. In the higher classes, the German gradually takes the place of the mother-tongue. Even in the gymnasia, a similar regard for the mother-tongue is shown; for, in all those gymnasia in which the majority of the pupils is of the Polish nationality, the Polish language is, at least partly, used as medium of instruction in the lower classes. — Within the bounds of the present United States, the Spanish, the French, the Dutch, the German, have all, at one time, been the predominant languages among the white settlers in large tracts of country; but all have gradually given way to the English. A dialect of German, commonly called *Pennsylvania Dutch*, is still extensively spoken among the descendants of the old German settlers in Pennsylvania; and, in the new acquisitions of territory in the South and on the Pacific, Spanish is still the language chiefly spoken in many sections; but the strong ties of commercial and social interests, and the educational influence of the national schools rapidly spread a knowledge of the English language, and cause it to be understood and spoken by the entire population. The desire to share in this universal knowledge of English pervades all classes of the American people, including the most recent immigrants; and, in this respect, the English language is the national language of the United States to a probably wider extent than the ruling language of any of the large countries of Europe. There is a very general wish on the part of the descendants of the old non-English settlers and the hundreds of thousands of recent immigrants, to cultivate, by the side of the English, a knowledge of the language of the country from which they or their ancestors emigrated. (See GERMAN-AMERICAN SCHOOLS, and GERMAN LANGUAGE.)

NATURAL SCIENCE. See SCIENCE, THE TEACHING OF.

NAUTICAL SCHOOLS, or Schools of Navigation, are institutions for educating and training pupils in the science and practice of navigation. Schools of this kind have long been in existence in European countries, and are of various grades. One of the chief objects of the theoretical instruction given in them, is to teach the pupils how to use the instruments of observation, and how to apply the results for the purpose of finding, at any instant, the exact position of a vessel at sea. The calculations necessary for this purpose require a knowledge of various branches of mathematics, especially trigonometry; hence, mathematics must constitute the chief part of the course of instruction in schools of navigation. In those schools in which most of the pupils lack the amount of knowledge necessary for a scientific understanding of these nautical calculations, they receive a merely mechanical instruction, which is found to be generally sufficient for the mercantile marine. The course of instruction varies considerably. In Prussia, where prominence is given to scientific instruction, it lasts eighteen months, of which twelve are spent in the mates' class, and six in the navigators' (captains') class. Before pupils can be admitted to the latter class, they must have been for eighteen months in active service as mates. In other schools, less attention is given to theoretical studies, and the course of instruction lasts only from four to six months. In 1875, the German Empire had 21 navigation schools, 14 of which were in Prussia, 4 in the Hanse towns, 2 in Mecklenburg, and 1 in Oldenburg. In the Austro-Hungarian Monarchy, there were 8 nautical schools, in France 42, in Italy 23, in Russia 4, in Finland 6, in Sweden 9, in Norway 6, in Denmark 1, in Holland 9, in Belgium 2, in Spain 9, in Portugal 1, in Greece 5. England also has a large number of navigation schools of various grades. In some of the countries named, these schools are called *nautical schools;* in others, *navigation schools;* and France prefers the name *hydrographical schools.* In the United States, the legislature of the state of New York, in 1873, authorized the establishment of a nautical school in the city of New York, to be under the charge of the board of education of that city. The Chamber of Commerce of New York City was authorized to appoint a committee of its members to serve as a council for this school, and to co-operate with the board of education in its management. (See NEW YORK.) The U. S. congress, in an act approved June 8., 1874, authorized the use of certain national vessels for this purpose, as well as the detailing of naval officers to act as superintendents and instructors in such schools, but with the special provision, "that no person shall be sentenced to, or received at, such schools as a punishment, or commutation of punishment, for crime." The course of instruction covers a period of from 18 months to 2 years. The pupils who complete it successfully, receive a certificate; and efforts are made to obtain positions for them on board of the best ships. If, after their first voyage, they desire to qualify themselves for the position of mate or captain, instruction is given them in practical and theoretical navigation, and in such other branches as are deemed necessary. A school similar to that in New York, is conducted in a government vessel in the port of San Francisco.

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There is a very general wish on the part of the descendants of the old non-English settlers and the hundreds of thousands of recent immigrants, to cultivate, by the side of the English, a knowledge of the language of the country from which they or their ancestors emigrated. (See German-American Schools, and German Language.)

NATURAL SCIENCE. See Science, the Teaching of.

NAUTICAL SCHOOLS, or **Schools of Navigation,** are institutions for educating and training pupils in the science and practice of navigation. Schools of this kind have long been in existence in European countries, and are of various grades. One of the chief objects of the theoretical instruction given in them, is to teach the pupils how to use the instruments of observation, and how to apply the results for the purpose of finding, at any instant, the exact position of a vessel at sea. The calculations necessary for this purpose require a knowledge of various branches of mathematics, especially trigonometry; hence, mathematics must constitute the chief part of the course of instruction in schools of navigation. In those schools in which most of the pupils lack the amount of knowledge necessary for a scientific understanding of these nautical calculations, they receive a merely mechanical instruction, which is found to be generally sufficient for the mercantile marine. The course of instruction varies considerably. In Prussia, where prominence is given to scientific instruction, it lasts eighteen months, of which twelve are spent in the mates' class, and six in the navigators' (captains') class. Before pupils can be admitted to the latter class, they must have been for eighteen months in active service as mates. In other schools, less attention is given to theoretical studies, and the course of instruction lasts only from four to six months. In 1875, the German Empire had 21 navigation schools, 14 of which were in Prussia, 4 in the Hanse towns, 2 in Mecklenburg, and 1 in Oldenburg. In the Austro-Hungarian Monarchy, there were 8 nautical schools, in France 42, in Italy 23, in Russia 4, in Finland 6, in Sweden 9, in Norway 6, in Denmark 1, in Holland 9, in Belgium 2, in Spain 9, in Portugal 1, in Greece 5. England also has a large number of navigation schools of various grades. In some of the countries named, these schools are called *nautical schools;* in others, *navigation schools;* and France prefers the name *hydrographical schools.* In the United States, the legislature of the state of New York, in 1873, authorized the establishment of a nautical school in the city of New York, to be under the charge of the board of education of that city. The Chamber of Commerce of New York City was authorized to appoint a committee of its members to serve as a council for this school, and to co-operate with the board of education in its management. (See New York.) The U. S. congress, in an act approved June 8., 1874, authorized the use of certain national vessels for this purpose, as well as the detailing of naval officers to act as superintendents and instructors in such schools, but with the special provision, "that no person shall be sentenced to, or received at, such schools as a punishment, or commutation of punishment, for crime." The course of instruction covers a period of from 18 months to 2 years. The pupils who complete it successfully, receive a certificate; and efforts are made to obtain positions for them on board of the best ships. If, after their first voyage, they desire to qualify themselves for the position of mate or captain, instruction is given them in practical and theoretical navigation, and in such other branches as are deemed necessary. A school similar to that in New York, is conducted in a government vessel in the port of San Francisco.

NAVAL SCHOOLS are schools for the training of midshipmen in all the theoretical and practical branches requisite to fit them for their profession. In the United States, there is the Naval Academy at Annapolis, Md., which was established, in 1845, by George Bancroft, then secretary of the navy. Originally little more than a school of practice on board ship, and intended to afford comparatively slight mental training, it was, in 1850, reorganized under its present name. The course of study was materially enlarged, and the institution was placed under the charge of the Bureau of Ordnance and Hydrography. In 1851, a four years' course of instruction was adopted. In March, 1867, the school was placed under the care of the secretary of the navy; but its administration continued to be mainly conducted under the supervision of the Bureau of Navigation, which had been formed, and put in charge of it, in July, 1862. Since March, 1869, the supervision of the secretary over it has been without this intervention. March 3., 1873, a law was passed extending the course of study to six years.—The course of instruction comprises a thorough and exhaustive drill, not only in mathematics and the natural sciences, but in the English, French, and Spanish languages, in history, international law, seamanship, ship-building, gunnery, steam-enginery, and drawing (both mechanical and free-hand), especially in its applications to naval construction, machinery, and map-making. Three times a week, exercises in practical seamanship, on board ship or in boats, vary the courses of the lecture and recitation room; while, from the middle of June till the middle of September, a cruise along the coast, in a United States sailing-ship or steamer, gives opportunity for putting into practice all the nautical knowledge that has been acquired. The number of cadet-midshipmen, in 1874—5, was 297; the number of instructors, 58.—Since 1864, classes of naval constructors, of civil and steam-engineers, called cadet-engineers, have been permitted to be educated at the academy, the number of such being limited to 50, and the course for them being two years at the school, and two years on board ship. During the civil war, the academy was removed to Newport, R. I.; but, soon after its close, was brought back to Annapolis.—In England, the Royal Naval College was erected in 1729, at Portsmouth. There, formerly, youths intended for the navy were instructed in navigation etc.; but, in 1839, the college was remodeled, and appropriated to the instruction of junior naval and marine officers in the higher branches of science connected with their profession, and especially in the principles and practice of naval gunnery.

In 1872, the college was transferred to Greenwich.—On the continent of Europe, there are naval schools at Fiume (Hungary), Kiel (Prussia), Brest (France), Naples and Spezia (Italy), St. Petersburg (Russia), Stockholm (Sweden), Christiania (Norway), Copenhagen (Denmark), Willemsoord (Netherlands), Ferrol (Spain), Lisbon (Portugal), the Piræus (Greece), and on the island of Khalki (Turkey).

NEBRASKA, one of the western states of the American Union, to which it was admitted in 1867, as the 24th. Its area is 75,995 sq. m.; its population, in 1870, was 129,322, of whom 789 were colored, and 6,416 were Indians.

Educational History. While yet a territory (1854—67), Nebraska adopted a liberal school system which, as early as 1865, when the population was only 50,000, furnished free tuition 6 months in the year. In 1869, a general school law was passed, which has been modified from time to time to suit the wants of the rapidly increasing population of the state; and on this law, substantially, is based the present system. The intention of the school law of Nebraska is to afford an opportunity for a finished education to every child in the state. To this end, tuition is free from the day of admission to the primary school to the completion of the course in the university. The state superintendents have been as follows: S. D. Beals, 1869—71; J. M. McKenzie, 1871—77; and S. R. Thompson from 1877.

School System.—There is no state board of education. The constitution provides, that there shall be elected by the people every two years, a *state superintendent*, whose principal duties shall be, to apportion, twice each year (in June and December), the state school fund to the several counties, the basis of apportionment being the number of children between the ages of 5 and 21 years; to recommend for the use of the public schools a list of text-books; to examine applicants for state certificates; to hold teachers' institutes; to designate the forms of all blanks for the use of the schools, and for the reports of school officers; and to make a full annual report to the governor, of the educational condition of the state. Each county elects a *county superintendent* biennially, whose duty it is to divide the county into school-districts, if this has not already been done. He has no power, however, to change any district line, unless petitioned so to do by one-third of the legal voters in the districts affected—a legal voter being any male, or unmarried female 21 years of age, residing in the district, and subject to pay a district school-tax. It is the county superintendent's duty, also, to examine teachers, to visit each school in the county at least once each term, to hold teachers' institutes, to apportion to the several districts, twice each year, the public school money, and to report to the state superintendent annually the condition of the schools. For this service, he receives not less than $3, nor more than $5, per day for every day actually employed in the duties of his office. The county superintendent issues three grades of certificates to teachers: the first grade valid for 2 years, the second, for one year—both entitling the holder to teach in any district in the county; the third grade being valid for 6 months, and entitling the holder to teach only in a specified district. Three third-grade certificates, however, may be issued to the same person. Each school-district has three officers,—a *director*, a *moderator*, and a *treasurer*. One of these is elected each year at the April meeting. These officers have full control of all school matters pertaining to the district, except the building of school-houses, and the issuing of school bonds. They are not permitted to pay, out of the public funds, any teacher not holding a certificate from the proper authority. Relatives of these officers are ineligible as teachers. The director must, within 10 days after the annual meeting, report to the county superintendent the number of children of school age in the district, the appropriation of the state fund being based upon this return, and not payable without it. The permanent school fund consists of all moneys arising from the sale of the 16th and 36th sections in each township, the five per cent granted by Congress on the sale of public lands within the state, and all escheats, gifts, grants, etc., not otherwise appropriated. This fund is at present invested principally in state securities. Some of it, however, is in school-district and county bonds, and bond and mortgage, but all draws 10 per cent interest. The items are as follows:

School fund now invested..........	$497,937.34
Unpaid principal of school lands sold	637,887.80
Value of school lands leased.......	272,169.16
Total........................	$1,407,994.30

The constitution provides that the fund shall be invested hereafter only in United States and state securities, or in registered county bonds. The number of acres of school lands amounts to more than 2,500,000, none of which can be sold at less than $7 per acre. The apportionable school fund arises from the 10 per cent interest on all moneys forming a part of the permanent school fund, the 6 per cent rents of school lands leased, together with the proceeds of the one-mill tax. The other sources of income for the support of schools are the moneys arising from fines, licenses, dog-tax, and the special district tax. School districts are prohibited from levying for school purposes a greater tax than 25 mills on the dollar in any one year. Three months' school must be maintained in each school-district to entitle it to any portion of the public fund.

Educational Condition.—The number of school-districts in 1876, was 2,567; the number of school-houses of all kinds, 1,980; the number of districts in which graded schools exist, 55. The principal items of *school statistics* for 1875 are the following:

Number of children of school age.............		86,191
" " " enrolled................		59,972
" " teachers, males..........	1,468	
" " " females........	1,893	
Total............		3,361
Average monthly salary, males..........		$37.74
" " " females........		$32.60
Amount of apportionable school fund....		**$241,167.53**

Normal Instruction.—The state normal school was opened at Peru, in 1867. It was originally organized with three departments, the time required to complete the course being 13 years. In 1873—4, this was modified so as to comprise 2 departments, the preparatory and the normal, 5 years being necessary to complete the course. In the preparatory department, in addition to the usual elementary studies pursued the first year, botany is taught; in the second, zoölogy; in the third, Latin, Algebra, physical geography, physiology, and the history of the United States. Drawing and vocal music are also taught. In the normal department, the branches peculiar to schools of this description are pursued. The number of students in attendance at the present time (1876), is about 190.

Teachers' Institutes.—These bodies have been convened, from time to time, at such places as the state and county superintendents have deemed necessary. The annual attendance of teachers, since 1863, has been large, and the interest aroused has extended very generally among the people in the localities where the meetings have been held. The *State Teachers' Association* meets annually about the last of March.

An educational journal, *The Nebraska Teacher*, was begun in 1871, and is now one of the agencies for the instruction and training of the teachers of the state. Its editor is the president of the State Teachers' Association. A similar publication is issued by the faculty and students of the state university.

Secondary Instruction.—There are several high schools in the state, principally in the cities and large towns, where the great interest awakened in the subject of education has led, in some cases, to the erection of costly buildings, the most noted of which, the high school building of Omaha City, with a seating capacity for more than 700 pupils, was erected at an expense of more than $200,000. Similar schools, but not so costly, exist in Lincoln, Nebraska City, Ashland, Beatrice, Brownville, and Pawnee City. The intention of the school law was to connect the high schools directly with the state university, according to the system established in the state of Michigan, by making the graduates of the former admissible to the latter without further examination. The want of uniformity in the courses of study in the high schools, however, for some time led to such a lowering of the standard of admission as seriously to threaten the efficiency of the university. Measures have already been taken to remedy this.

The number of *private schools* in the state has very much decreased since 1870. The number at that time was 70, but increased confidence in the efficiency of the common schools had diminished the number, in 1874, to 30. There are but few *denominational schools* in the state,—Brownell Hall (Episcopalian), a ladies' seminary at Omaha, a Roman Catholic school in the same place, and another in Nebraska City. One business college, at Omaha, reported, in 1874, a total of 135 pupils, of whom 17 were females.

Superior Instruction.—The institutions intended to furnish an advanced education are as follows:

NAME	Location	When founded	Religious denomination
Doane College...... ..	Crete	1872	Cong.
Nebraska College....	Nebraska City	1868	Pr. Epis.
Univ. of Nebraska....	Lincoln	1869	Non-sect.

Scientific and Professional Instruction.—The Agricultural College is a department of the state university, and is governed by the same board of regents. The landed endowment of both institutions amounts to 134,800 acres of land, which at present is not available. The course of study requires 3 years for its completion, the ordinary provision being made for a liberal education, with special attention paid to those branches of natural science necessary to the business of farming. Connected with the college is a farm of 320 acres, on which the instruction given in the college is put to practical test. The number of students at present is 12. A divinity school exists as a department of Nebraska College, which prescribes a course of 3 years. In 1874, the number of its students was 2.

Special Instruction.—The Nebraska Institute for the Deaf and Dumb is situated near Omaha. It was organized in 1869, for the free education of all deaf and dumb children in the state, between the ages of 10 and 25, of sound mind, of good moral habits, and free from contagious disease. The course of study comprises 8 years of 40 weeks each. The studies pursued are those common to such institutions. The instruction in the first class is purely elementary; in the second class, language and arithmetic are taught; in the third, language, arithmetic, and geography; in the fourth, arithmetic, geography, the science of common things, and the history of the United States. Daily exercises in written language constitute a part of the instruction in all the grades during the entire course. Special instruction in articulation is given to semi-mutes. The institute has at present 3 instructors, and about 40 pupils in all the classes. The Asylum for the Blind was opened near Nebraska City, in December, 1875. It has a fine building and grounds, but its organization is so recent that but little is generally known in regard to it.

NEBRASKA, UNIVERSITY OF, at Lincoln, Neb., was chartered in 1869, and opened in 1871. It was established upon grants of land, amounting to 134,800 acres, made by Congress to the state for the support of a university and a college of agriculture and the mechanic arts. The charter provides for six departments, or colleges, namely: (1) a college of ancient and modern languages, mathematics, and natural science; (2) a college of agriculture; (3) a college of law; (4) a college of medicine; (5) a college of practical science, mechanics, and civil engineering; (6) a college of fine arts. Only the first two have yet (1876) been organized. In the first there are four courses of study of four years each; and, in the second, there are two courses, one of three years, and a course of one year. In the College of Literature, Science, and Art, the courses are the classical, the scientific, the Latin scientific, and the Greek scientific. There is a Latin or preparatory school connected with the university. It has a farm of 320 acres, and extensive chemical and physical apparatus. Tuition is free. In 1874—5, there were 8 instructors and 132 students, of whom 117 (48 collegiate and 69 preparatory) were in the department of literature, science, and arts, and 15 in the department of agriculture. Both sexes are admitted. Allen R. Benton, A. M., LL. D., is (1876) the chancellor.

NEBRASKA COLLEGE, at Nebraska City, Neb., under Protestant Episcopal control, was organized in 1865, and chartered in 1868. It is supported by the fees of students. The institution has a valuable mineral cabinet, and libraries containing about 2,000 volumes. It comprises a collegiate course and a grammar school, with a preparatory and a business course. Facilities are afforded for instruction in theology. In 1875—6, there were 8 instructors and 70 students (3 collegiate, 13 preparatory, and 54 business). P. L. Woodbury, M.A., is (1876) the head-master in charge.

NEEDLE-WORK. See FEMALE EDUCATION, and INDUSTRIAL SCHOOLS.

NETHERLANDS, the name of a kingdom in western Europe, which has an area of 12,680 square miles, and the population of which, in 1874, was 3,767,263, exclusive of its colonial possessions, the total area of which amounts to more than 660,000 sq. m.; and the population, to over 24,000,000.—The independence of the Netherlands was established in 1579, when the people revolted against the rule of Spain, and proclaimed the republic of the United Netherlands. Napoleon, in 1806, erected the kingdom of Holland; but the Congress of Vienna, in 1815, united Belgium and Holland under the title of the Kingdom of the Netherlands. In 1830, the southern provinces seceded, and formed the kingdom of Belgium; and, since that time, the name Netherlands has been applied exclusively to the kingdom formed of the northern provinces. About 61 per cent of the population of the kingdom are Protestants; and nearly 37 per cent, Roman Catholics.

History of Education.—The earliest school of which there is any record was that of St. Martin at Utrecht, said to have been founded in the time of Charles Martel. This school enjoyed great renown, and large numbers of pupils from the neighboring countries attended it. At the beginning of the 12th century, Utrecht possessed no less than five flourishing schools, several of which had each a rector, in addition to the priests, who had the general control of them. At that time, several convent schools gained great reputation, the most prominent of which were at Egmond, Nimeguen, Middelburg, and Admoert, near Groningen. Schools were also established at this time by the more flourishing towns, for the instruction of the citizens. Authority to open these schools was always derived from the courts, and the supervision and instruction were entirely secular. The best-known school of this class was at Zwolle, which, in the 14th century, is reported to have had over 1,000 pupils. In Holland, as well as in Belgium, the Brethren of the Common Life did much to promote education. (See HIERONYMIANS.) During the 15th century, this country was rich in eminent scholars, among whom may be mentioned John Wessel, Rudolf Agricola, Alexander Hegius, and Erasmus. A new era was inaugurated with the opening of the Leyden University, in 1575, which awakened a new zeal for all departments of learning. Other universities were established, at Franeker (1575), at Groningen (1614), at Utrecht (1638), and at Harderwick (1648), all of which greatly added to the reputation of Dutch scholarship throughout the world, and rendered their people one of the best educated nations of the globe. During the 18th century, there was, however, a visible decline; and, at the beginning of the 19th century (1811), Cuvier made a rather unfavorable report of the condition of the universities and Latin schools of Holland. The French government which Napoleon I. established in Holland, introduced some reforms, which were subsequently sanctioned and further developed by King William I. Since that time, the Netherlands have regained, in some departments of superior instruction, especially in that of the ancient languages, their former reputation. The Dutch legislation in regard to primary instruction has attracted the attention of educational writers and the governments of various countries, chiefly by its outspoken opposition to the principle of denominational schools. The basis of the Dutch system was laid in the celebrated law of 1806, drawn up by M. Van der Ende, who was, for nearly thirty years (until 1833), at the head of the common-school department of the Dutch ministry. Articles 22 and 23 of this law provide that pupils shall be trained "in the practice of all the social and Christian virtues," and that they shall "not remain without instruction in the doctrines of that religious faith to which they belong;" but that the teacher of the school "shall not have charge of this branch of instruction." The principle of secular and mixed schools had, at first, the co-operation of ministers of every creed, even of the Roman Catholics; but, after 1848, sharply-defined parties arose in mutual opposition. The new constitution of 1848, which is still in force (1876), provides that instruction shall be free, and under the absolute control of the government. At this time, a party of orthodox Protestants had been founded, named after Groen van Prinsterer, a prominent professor and writer, who asserted that the Roman Catholics, wherever they had any influence, were strictly carrying into execution the laws of 1806; that is, excluding from the schools every thing of a doctrinal character, even the Bible itself. As the best method to check the anticipated advances of that Church, the Groenists attacked the principle of mixed schools, denouncing them as breeding-places of atheism and immorality, and demanding in their place denominational schools, which might afford religious instruction. This party was in a small minority in the chambers, in 1857, when the new educational law was framed, which still remains in operation (1876). The majority was composed, in the first place, of Catholics who preferred to exclude religious instruction entirely from the schools, rather than have it of a more or less Protestant character; secondly, of the Liberals, who were in favor of the total separation of church and state; and, finally, of Dissenters of every kind. This question was disposed of by the law of 1857, which provided that, while public instruction should communicate all necessary secular knowledge, and develop the understanding of the pupils, it should, "at the same time, train them to the practice of every Christian and social virtue." It also enjoined upon the teacher to refrain "from teaching, doing, or permitting any thing derogatory to the respect that is due to the religious convictions of the nonconformists." Instruction in religion," it stated, " is left to the different sects. The use of the school buildings may, however, be granted for this purpose, to accommodate the children that attend those, at hours not appropriated to other classes."

The Catholics, however, left their liberal allies, and at present are united with the orthodox Protestants and Conservatives, in an attempt to divide the school fund, a scheme which is opposed by the Liberals only. This question of denominational schools has since formed the chief issue at the general election. In the election of 1875, for members of the second chamber, the Liberals obtained a majority of two over the united opposition.

Primary Instruction.—Primary instruction, as stated above, is regulated by the law of 1857. The immediate supervision of the schools is in the hands of local school committees. Above each committee, there is a district-school superintendent, above him a provincial inspector, and finally, as the highest authority, the minister of education. Every community has a local committee; communities, however, which have united to establish and sustain a school, have a committee in common. In communities with less than 3,000 inhabitants, the burgomaster and the councilors perform the duties of the committee. In the other communities, the members of the committee are appointed by the common council. The district superintendents and provincial inspectors are appointed by the king. The common schools are either public or private. Among the former, are those which are sustained by the parishes, provinces, or state, either alone or conjointly; private schools may, in case of need, be aided by the parish, but must then be open to children of all denominations. The parish decides how many schools are necessary to supply the wants of the inhabitants, but their number may be increased by the provincial or state authorities. Teachers are of two classes: assistants, who must be 18 years of age, and principal teachers, who must be 23 years of age. If a teacher has over 70 scholars, he receives an *aspirant*, that is, a young man who has not reached the requisite age to be an assistant teacher. When the number of scholars reaches 100, he is entitled to a regular assistant; and when it reaches 150, to an assistant and an *aspirant;* and so on, receiving for every additional 100 pupils an assistant, and for every 50, an *aspirant*. Instruction in the common schools is of two kinds, — common and higher. Common instruction comprises reading, writing, arithmetic, the elements of geometry, the Dutch language, geography, history, the natural sciences, and music. Higher instruction comprises a course in the elements of living languages, elementary mathematics, the first elements of agriculture, gymnastics, drawing, and needlework. The number of schools, Dec. 31., 1872, was 3,728, of which 2,608 were public. The public schools had 6,538 male teachers, and 477 female teachers; and the private schools, 2,332 male teachers, and 1,565 female. The number of pupils in both public and private schools, was 228,145 boys, and 208,496 girls. In 1873, there were 3,790 primary schools, with 500,059 pupils. There were also 5 teachers' seminaries, supported by the government, besides a number of private and communal institutions. The amount expended for primary instruction in 1870, both by the state and the communities, was 4,984,533 florins (1 florin = $0.385), or $1,919,045.

Secondary instruction is regulated by the law of 1863. The schools of this grade are either public or private. The law includes among the secondary schools the higher burgher schools (corresponding to the German real schools), the burgher schools for trades-people and farmers, and the polytechnic school, at Delft. The gymnasia and Latin schools are classed with the universities. The higher burgher schools are of two kinds, one having a five years' course, and the other a three years' course. The average age of the scholars in the lowest class is 13 years. Ancient languages are excluded entirely; while French, German, and English are studied with considerable thoroughness. The course of study comprises mathematics, the elements of mechanics, technology, mineralogy, botany, zoölogy, natural philosophy, chemistry, cosmography, Dutch constitutional history, political economy, statistics, geography, history, modern languages, bookkeeping, penmanship, drawing, and gymnastics. The examination for graduation comprises all these subjects, and is conducted by a committee chosen from all the teachers of the province. The rules of the royal schools are determined by the royal decrees of 1864 and 1873. The teachers of the state schools are appointed by the king, and those of the communal schools, by the magistrates. The course of study is arranged by the director and the teachers, and must be approved by the minister. The yearly tuition fee is, at the most, 60 florins. Burgher schools are established chiefly for the children of trades-people and farmers, and consist of day and evening schools. Every community of more than 10,000 inhabitants, must have at least one burgher school, both day and evening. The course, in the day school, comprises two years. If the attendance does not warrant the establishment of a day school, a community may be excused from having such a school; but, in such a case, the evening school must comprise a two years' course. The teachers, in these schools, are appointed by the common councils, and are paid by the communities. They are also entitled to a pension from the state, under the same conditions as other officers of the government. The cost of the burgher schools is borne by the communities, who may charge a fee not to exceed 12 florins per year. In 1871, the number of burgher schools was 43, and of higher burgher schools and commercial schools, 47. The number of teachers was 338, in the burgher schools, and 542, in the higher burgher schools; of pupils, 3,801, in the burgher schools, and 3,285, in the higher burgher schools. The polytechnic school at Delft is intended for those who wish to follow the business of engineering in any of its various branches. This school, in 1875—6, had 26 professors and 260 students. The following schools are also classed among secondary institutions: 4 schools of agriculture, with 18 professors and 53 students; 9 schools of navigation, with 20 professors and 200 students; 30 drawing schools, with 108 professors and 2,500 students; seven secondary schools for girls, with 74 teachers and 472 students; and 78 secondary schools for mechanics. The sum total expended on secondary instruction amounted to $557,002, of which $278,192 was paid by the state; $4,845, by the provinces; $190,945, by the municipalities; and $83,018 was derived from tuition fees.

Superior Instruction.—According to the law of 1815, the institutions for superior instruction are classed as Latin schools and gymnasia, athenæums, and *high schools*. The Latin schools and the gymnasia correspond to the German gymnasia; and the athenæums and *high schools*, to the universities, of which, however, only the *high schools* are entitled to confer academic degrees. Each Latin school and gymnasium has a rector and conrector and one or more preceptors and *docents*, according to the means of the institution. The studies comprise Latin and Greek, mathematics, history, and mythology. The following studies are taught in only a part of the schools: the modern languages, Hebrew, and natural history. The gymnasia have pretty much the same course of study as the Latin schools. In 1873, the number of Latin schools and gymnasia was 54, with 227 professors and 1,185 students. There are three universities,—at Leyden, Utrecht, and Groningen, which, in 1871, had 732, 488, and 146 students, respectively, making a total of 1,366 students. Of these, 585 studied law; 302, theology; 242, medicine; 157, natural sciences; and 117, literature. The two athenæums, at Deventer and Amsterdam, had together 261 pupils. In 1876, it was resolved to raise the athenæum of Amsterdam to a full university. In 1875—6, Leyden had 45 professors and 942 students; Utrecht, 34 professors and 527 students; Groningen, 30 professors and 188 students; and the athenæum of Amsterdam, 40 professors and 399 students.

Special Instruction.—Besides the special schools classed among the secondary schools, there are the following: five Catholic theological seminaries; an Old Catholic (Jansenist) seminary, in Amersfoort; a Lutheran seminary, and seminaries for Remonstrants and Mennonites, in Amsterdam; a seminary of Separatists, in Kampen; two Jewish seminaries, in Amsterdam; a school of veterinary surgery, and a school of East Indian languages, in Delft; a school for army surgeons, at Utrecht; schools of art, in Amsterdam, Bois-le-Duc, the Hague, Rotterdam, and Groningen; and a school of music, at the Hague. In 1874, there were three institutions for deaf-mutes, with 391 inmates; three asylums for the blind; and an asylum for idiots, having 19 girls and 23 boys, and, in connection with it, there is a day school for idiots.

Luxemburg.—This country is governed by the king of Holland as grand-duke of Luxemburg. It had, in 1874, 644 primary schools, with 28,437 pupils; one teachers' seminary; an athenæum, composed of a gymnasium and a trade school, of 6 classes each; and 2 progymnasia, having together 42 professors and 911 pupils; a Catholic seminary and an agricultural school, in Echternach.—For further information in regard to education in the Netherlands, see Barnard, *National Education*, vol. II.; Cousin, *De l'instruction publique en Hollande*, 1836—7; Buddingh. *Geschiedenis van Opvoeding en Onderwijs in de Nederlanden* (Hague, 1847); Laveleye. *Débats sur l'enseignement dans les chambres hollandaises*, session of 1857 (Geneva, 1858).

NEVADA, one of the extreme western states of the American Union, originally a part of the territory of Utah, from which it was set off as a separate territory, March 2., 1861, and enlarged by a further portion of Utah, in 1862. It was admitted as a state in 1864. It was further enlarged by added territory from Utah and Arizona, in 1866. In 1859, the population was about 1,000; but, in August, 1861, it was estimated at 16,000. In 1870, it was 42,491, of whom 38.959 were whites; 357, colored persons; 3,152, Chinese; and 23, civilized Indians.

Educational History.—Notwithstanding the almost exclusive absorption of the energies of the people in mining and kindred operations, the interests of education have not been overlooked. The first constitution of the state directed the legislature to organize a public-school system, to found a state university, to establish graded and normal schools, and to promote by all appropriate means the cause of education. To this end, the state was to be divided into school-districts, and schools were to be established therein. For the maintenance of these schools, there were to be set apart the 50,000 acres granted by Congress to all the new states, 30,000 acres for each senator and representative, the 16th and 36th section in each township, a half-mill tax on all property subject to taxation, and all escheats, and fines for personal offenses. The interest of all the money derived from the above sources (except the half-mill tax, of which five per cent is taken), together with two per cent of the receipts from all toll-roads and bridges, is devoted to school purposes, at the present time. The method of rate-bills is, in some cases, employed. The permanent school fund, in 1874, amounted to $250,000.— The method of supervision was, from the first, the same as now employed; but the original provisions of law in this regard have been modified somewhat by successive legislatures, notably in 1873, when a compulsory education law was passed. From 1866 to 1874, the state superintendent was A. W. Fisher, who, at the latter date, was succeeded by S. P. Kelly, elected for four years.

School System.—The supervision and management of the educational system of the state are confided to a *state board of education*, consisting of the governor, surveyor-general, and the superintendent of public instruction. Its duties are to organize schools, prescribe a uniform list of text-books, and devise all needful measures for the conduct and improvement of the schools. The *state superintendent* is the executive officer of the board. He performs all the duties generally appertaining to the office, and makes a biennial report to the governor. *County superintendents* are elected throughout the state, each for two years. *Boards of trustees* are elected in the several school-districts, and are so constituted as always to contain at least one experienced member. Each board consists of three trustees in districts having less than 1,500 voters, and of five in all others. In addition to the usual duties pertaining to such officers, they are intrusted with the power of levying taxes in order to supply deficiencies in the school moneys received from the state. They are required not only to keep a public record of their proceedings, but to publish, in some newspaper, full minutes of those proceedings. The county superintendent appoints two competent persons, who, with himself, constitute a board of examiners of which he is chairman. A certificate, either from this county board or from the state board, is necessary before a teacher can receive any compensation for services rendered. A life certificate of any state, or a diploma from a California state normal school, entitles the holder to a county certificate without examination, if presented within five years from the date of its issuance. The compulsory school law requires parents or guardians to send all children between the ages of 8 and 14 years, unless otherwise educated, to the common schools for not less than sixteen weeks each year, eight weeks of which must be consecutive. A penalty of not less than $50, nor more than $100 for the first offense, and of not less than $100 nor more than $200 for each subsequent offense, is imposed for a violation of this law. The schools are required to be kept open at least six months each year in every school-district.

Educational Condition.—The number of school-districts, in 1874, was 71; the number of schools dispensing with rate-bills, 68; the total number of schools, 108. Of these schools, 21 are primary; 4, intermediate; 12, grammar; 2, high; and 69, unclassified. The support of the schools was derived from the following sources:

From taxes	$93,431.23	
" rate-bills	317.69	
" state apportionments and other sources	52,432.40	
Total		$146,181.32

The expenditures were as follows:

For teachers' salaries	$83,548.88	
" sites, buildings, etc	22,241.05	
" other purposes	18,511.71	
Total		$124,301.64

The average wages of teachers per month was $100.00

The principal items of *school statistics* for the year were the following:

Number of pupils enrolled (6—18)		4,811
Average attendance		2,884
Number of teachers, males	35	
females	80	
Total		115

Normal Instruction.—No schools for the instruction of teachers are yet reported. The legislature, however, in 1875, passed an act authorizing the establishment of a normal school.

Secondary Instruction.—A preparatory school in connection with the university, provided for by an act of the legislature, in 1873, has been opened at Elko; and an appropriation of $20,000 was, in 1875, made for its support. This, and two high schools, are the only means for free secondary instruction now known to be in existence in the state.

Superior Instruction.—By an act of the legislature, in 1873, the state university was established; but little has as yet been done, except the organization of the preparatory department, above referred to.

Professional and Scientific Instruction.— In 1875, an act was passed for the establishment of an agricultural college, and for colleges of arts and mines, endowed with the congressional land grant of 90,000 acres; but this action was so recent, that no report has been made of their organization.

Special Instruction.— The settlement of the state is so new, and the population so small, that no efforts have yet been made to establish special institutions, for the blind, or for the deaf and dumb. Those afflicted in this way have thus far been cared for, at the expense of the state, in institutions provided for the purpose by the neighboring state, California. Several deaf-mutes are under instruction in the Institution for the Deaf, Dumb, and Blind, near Oakland.

NEWARK, the chief city of New Jersey, first settled in 1666, by Puritan families from Connecticut, who were joined the next year by other settlers from the same colony, led by their minister, the Rev. Abraham Pierson, who named the settlement after Newark, in England, where he had formerly preached. Newark was incorporated as a city in 1836. Its population, in 1840, was 17,200; but, in 1870, it was 105,059, of whom 69,175 were natives, and 35,884 foreigners, including 15,873 Germans, the largest foreign element. The population, according to the state census of 1875, was 123,310.

Educational History.—In 1676, ten years after its settlement, the selectmen of the town "agreed with Mr. John Catlin that he should do his faithful, honest, and true endeavor to teach the children of those as have subscribed, the reading and writing of English, and also of arithmetic, if they desire it, as much as they are capable to learn, and he capable to teach them." About 1700, a small school-house was built in Market Street, which, it is thought, was the only school building in the city for many years. From 1747 to 1756, the College of New Jersey was located in Newark, but, in the latter year, was removed to Princeton. In 1769, it is recorded that the children of the poor should be "constantly sent to school at the expense of the person that takes them," it being the custom, at that time, to award annually the keeping of the poor, by public auction, to the lowest responsible bidder. In 1792, the Newark Academy was opened in Broad Street, and three years after, was incorporated. It remained in its original location till 1856, when it was removed to the present site in High Street. The next school-house was built in 1797, near the South Park. This was followed by another, in 1804, in Market Street; another, in 1807, in Fair Street; one in New Street, in 1809; and one in Orange Street, in 1820. These were all built by private enterprise, and the schools held in them were consequently supported by tuition fees. In 1813, the sum of $500, for the schooling of the children of the poor, was voted by the people, the practice of requiring the person who supported the poor to provide for the schooling of their children, being at that time discontinued, and never revived. This sum, or a larger one, was voted, for the same purpose, annually thereafter till 1836, when Newark was incorporated as a city. This method of providing for the education of a special class of children proved to be the entering wedge which opened the way for a system of public schools free to all the children of the city. The first public-school house was built in 1843 or 1844, and was located in the third ward, between Hill and Court streets. It was a building of two stories, the first being occupied as a girls' school, the second as a boys'. From that time till 1848, six similar school-houses were built. In 1850, the legislature passed an act, to establish public schools in the city, the population of which, at that time, was 38,894. This was supplemented, in 1853, by an act incorporating the board of education, with ample powers for the establishment and maintenance of public schools. In 1855, there were 7 public-school houses, and 16 public schools, including one primary school for white children, and one of the same grade for colored children, the average daily attendance being 2,461 pupils. The public high school, which was opened in 1855, gave a new impulse to the cause of the schools, resulting in the establishment of a graded system of primary, grammar, and high schools. In 1865, with a population of 87,428, the city had 16 school-houses, and the estimated value of its school property was $200,000. The first city superintendent was Stephen Congar, who held the office from 1853 till 1859. He was succeeded in the latter year by George B. Sears, who has held the office without interruption to the present time (1876).

School System.—The general management of the public schools of the city is committed to a *board of education*, composed of two commissioners from each ward, who are elected by the people biennially. They elect annually a *city superintendent*, whose principal duties are to enforce the regulations of the board, to visit the schools, and to report to the board, from time to time, concerning their condition. The school money is derived chiefly from a special city tax, which varies annually in such a way as to make good the deficiency of the state tax. The course of study in the primary schools comprises reading, spelling, writing, arithmetic, geography, drawing, and vocal music. The additional studies in the grammar schools are grammar, history, composition, and declamation; in the high school, the studies pursued, in addition to those of the grammar schools, are chemistry, physiology, astronomy, algebra, book-keeping, geometry, geology, drawing, gymnastics, and certain other branches, chiefly languages, which are prescribed by the board of education. The school age is from 6 to 18; the school year is 10 months, except in the evening schools, in which the term is 3 months. The day schools are opened, and the evening schools closed, by the reading of a portion of the Scriptures without comment, and the saying of the Lord's Prayer. In 1875, the number of schools was 44: 1 normal and 1 high school, 12 grammar schools, 22 primary schools (including 1 colored school), 2 industrial schools, and 6 evening schools.—The principal items of *school statistics* for the year 1875 are as follows:

Number of children of school age		35,125
" " " enrolled in public schools, including evening schools		18,087
Average number of pupils on the roll		12,589
Average daily attendance		10,852
Number of teachers, males	54	
" " " females	218	
Total		272
Total receipts		$209,707.05
" expenditures		$209,700.95
Total value of school property		$900,000.00

Besides the public schools, there are many academies, and private and denominational schools, the Roman Catholics alone having several of the latter. There are, also, two libraries, that of the New Jersey Historical Society, which contains 6,000 volumes, 10,000 pamphlets, and some manuscripts of great age and value; and that of the Newark Library Association, which contains 20,000 volumes. Courses of instruction, chiefly in elementary branches, are, also, provided at nearly all of the orphan asylums, of which there are several.

NEWBERRY COLLEGE, at Walhalla, Oconee Co., S. C., founded in 1858, is under Evangelical Lutheran control. It was removed from Newberry in 1868. The college library contains about 4,000 volumes. The cost of tuition in the collegiate department is $45 per year. In 1875—6, there were 5 instructors and 101 students (35 collegiate and 66 preparatory). The Rev. T. Stork, D.D., was the president until 1861, when the Rev. J. P. Smeltzer, D. D., the present incumbent (1876), was chosen.

NEW BRUNSWICK, a province of the Dominion of Canada, having an area of 27,322 sq. m., and a population, in 1870, of 285,594. It was first settled by the French, in 1639, and continued to form, with Nova Scotia, a part of Acadia, until it fell into the hands of the British. The first British settlers emigrated from Scotland in 1764; and, in 1784, New Brunswick was separated from Nova Scotia, to form a separate province. In 1867, it joined the Dominion of Canada.—The present school law (1876) was passed in 1871, and amended in 1873. According to this law, the schools are governed by a board of education, composed of the lieutenant-governor, the members of the executive council, the president of the university of New Brunswick, and the superintendent of schools, who is appointed by the lieutenant-governor. The duties of the board are, to establish a training and model school, appoint 14 inspectors of schools, divide the province into school-districts, and alter the districts as may be necessary, make regulations for schools and the examination of teachers, and prescribe text-books and library books, and school-house plans. The superintendent has the general supervision of the schools, subject to the board. The inspectors visit and examine the schools, advise teachers, and report to the superintendent as often as the board may direct. No school-district can contain less than 50 children, unless the area be four miles. There must be three trustees in a district, elected at the annual district meeting, one each year. When a district fails to elect, or a trustee fails to act, one or more trustees may be appointed by the inspector, on the requisition of seven rate-payers. The trustees have under their charge the local management of the schools, may employ and suspend teachers, and must furnish the clerk of the peace of the county with a list of the persons liable to be rated. Male candidates for the position of teacher must be at least 18, and females 16, years of age, and must have attended a term at some normal school, or else be graduates of some university. Licenses are provincial, valid during good behavior, and are issued by the board of education. Examinations are held at Fredericton, in March and September, and at St. John and Chatham, in September, on the third Tuesday of the month; and are presided over by the superintendent or his deputy. The teacher opens and closes the school daily by reading from either version of the Scriptures, and by the saying of the Lord's Prayer. Any other prayer permitted by the trustees may be used, but no pupil can be compelled to be present on these occasions against the written request of his parents or guardian. Evening schools may also be established. Besides the district schools, there is a grammar school in every county. These schools are allowed to unite with the district schools under the joint management of the grammar and the district-school trustees, so as to secure a proper gradation of schools. A system of superior schools has also been established, in which the course of study is nearly the same as in the grammar schools. Only one such school may be established in a parish, and it must not be in the same district as the grammar school. Teachers' salaries are provided for from the provincial treasury, the county school fund, and the district assessment. After 1876, the amount paid to a teacher from the provincial treasury, must be regulated partly by the license, and partly by the quality of instruction, as tested semi-annually by an inspector. Thus, males, in class I., receive $110 per year; in class II., $80; in class III., $60; females, in class I., 70; in class II., $50; in class III., $40; and for the quality of instruction, if ranked I., at the rate of $40; II., $25; III., $10; assistants, at one-half of such rates. Of the county-school fund one-half must be apportioned to the trustees for teachers' salaries in the following manner: every qualified teacher, besides assistants, to receive $30 per year, and the balance to be distributed according to average time and attendance. The schools in the cities of St. John and Fredericton are under special city government. Each of these cities forms one district with a board of seven trustees, which must be a corporate body. Three of the trustees are appointed by the lieutenant-governor, and four by the city council. All schools conducted under the provisions of the law of 1871 are non-sectarian. The school year is divided into a summer and a winter term; the former, from May 1. to Oct. 31.; the latter, from Nov. 1. to April 30. On April 30., 1875, there were 1,053 schools in operation, with 1,116 teachers and 46,039 pupils (25,646 boys and 20,393 girls). Of these, 271 were under five years of age; 39.075, between five and fifteen; and 6,693, over fifteen years of age. During the year ending April 30., 1875, there were 141 districts with schools in the summer term, but without schools in the winter; and 144 districts with schools in the winter, and without schools in the summer. The number of teachers employed during the winter term, ending April 30., 1875, was 466 males and 626 females, making a total of 1,092. In addition, 4 male and 20 female assistants were employed. The number of grammar schools, in the school year ending April 30., 1875, was 14, with 37 teachers in the summer term, and 39 in the winter term. The whole number of pupils registered in the summer term was 1,776, and 2,027 in the winter term. The number of pupils on register was 716 in the summer term, and 809 in the winter term; and the average daily attendance was 434 in the summer, and 531 in the winter. The number of superior schools, April 30., 1875, was 50, with 3,053 pupils. The provincial normal school in Fredericton had 4 teachers and 130 students during the year, of whom 108 received licenses to teach. Connected with the normal school is a model school.—The University of New Brunswick, at Fredericton, is composed of three classes,—freshman, junior, and senior. The university confers the degrees of Bachelor of Arts, Master of Arts, Bachelor of Science, Doctor of Philosophy, Bachelor of Common Law, and Doctor of Common Law. The degree of Doctor of Laws (LL. D.) is strictly honorary. The Mount Allison Wesleyan College and Academies in Sackville, belong to the Methodist Church, but are also extensively patronized by students from other denominations. They are the result of the benevolence of Mr. Chas. F. Allison, and comprise a male academy, founded in 1842, a female academy, founded in 1854, and the college, founded in 1862. They are under a board of governors, appointed by the general conference of the Methodist Church of Canada. The college has, besides its regular course, a literary or scientific course, from which Latin and Greek are omitted. A faculty of theology is also connected with the college, which confers the degree of Bachelor of Divinity. Connected with the male academy, is a commercial college, which is designed to insure thorough preparation for college, or for entrance upon a course of special training for agricultural, mechanical, or commercial pursuits, or of specific study for professional life. In the female academy, there are two courses of study. The first is the regular course for the baccalaureate degree, while the other course is designed for those who prefer to substitute for the classics, the modern languages and natural science.— See MARLING, *Canada Educational Directory and Yearbook for* 1876, LOVELL, *Directory of British North America* (1873).

NEW CASTLE COLLEGE, at New Castle, Pa., was established in 1872, and chartered in 1875. It is non-sectarian, and admits both sexes. It is supported by tuition fees. The college has a preparatory, a classical, a scientific, a commercial, a telegraphic, a musical, an art, and a normal department. In 1875—6, there were 15 instructors and 325 students, of whom 121 were in the preparatory and collegiate departments. John R. Steeves, A. B., is (1876) the president.

NEWFOUNDLAND, an island of North America, belonging to Great Britain; area, 40,200 square miles; population, in 1874, 161,381. Newfoundland is supposed to have been discovered by the Northmen, about the year 1,000. It was rediscovered by the Cabots, in 1497, and has remained with the British crown ever since. The first governor was appointed in 1728, and the first legislative assembly met in 1733. It is the only part of British North America not yet incorporated in the Dominion of Canada. The public-school system is based on the denominational principle, and was re-organized by the Education Act of 1876. According to this law, each denomination represented on the island is entitled to a share of the school money. In those districts in which a particular denomination forms a majority of the inhabitants, the governor appoints a board of education of from 5 to 7 members of that denomination. These boards may establish schools in their respective districts, make rules for their government, and appropriate all moneys granted to such districts. A proportionate amount of the government grant must be at the disposal of the denomination forming a minority in any district. A certain fee must be paid by each child to the teacher. The governor appoints three superintendents of education,—one for the Church of England schools, one for the Roman Catholic schools, and one for the Methodist schools, who supervise and inspect the schools of their respective denominations. The Church of England and Methodist superintendents also, every year, alternately, inspect the other Protestant board schools, belonging to the Presbyterians and Congregationalists. The superintendents are required to visit annually, if possible, all the schools and training institutions of their respective denominations, and carefully examine into their condition. They must present an annual report on the schools under their charge, with the statistics of such schools, and detailed accounts of income and expenditure. They are also required to give such advice as they may deem proper to teachers and boards of education, to do all in their power to carry out a uniform system of education, and, by public addresses or otherwise, to improve the character and efficiency of the public schools, as well as to promote the establishment of other public schools in destitute localities. There are two higher grammar schools, in Harbor Grace and Carbonear, governed by their own boards of education. There are also four academies in St. John's, belonging respectively to the Roman Catholics, and to the Church of England, the Methodists, and other Protestant denominations. The governor appoints for each of these a board of directors of seven or nine members. The Roman Catholic and Church of England academies are connected with collegiate institutions belonging to those denominations—the former, with Bonaventure College, the latter, with the Episcopal Theological Institute. Pupil teachers are trained in these academies, who, upon completing their studies, are bound to teach a specified time in the public schools. Candidates for the position of teacher must be at least 16 years old, and, must have either been pupil teachers, or must have been trained in some normal or training school abroad, or must have served as teachers for at least two years. In 1874, there were 157 Protestant schools, with 7,805 pupils, and 136 Roman Catholic schools, with 5,792 pupils. Besides these, there were 7 commercial schools, with 502 pupils, and 13 convent schools, with 1,965 pupils. The inspectors of the Church of England and Methodist schools, in their joint report of Dec., 1875, deplore that, "notwithstanding the large amounts which have been granted by the legislature for educational purposes, many large communities, especially in Notre Dame Bay and Trinity Bay, have been hitherto without schools, and the youth growing up to manhood and womanhood, are unable to read and write." In most of the schools which they visited, "reading, writing, and arithmetic have been the only subjects taught, even in some of the largest settlements; and, in most cases, the attainments of the scholars have not been very satisfactory."—See *The Education Act*, 1876; Lovell, *Gazetteer of British North America* (Montreal, 1873); and the official *Reports of the Inspectors of Schools*.

NEW HAMPSHIRE, one of the thirteen original states of the American Union, was the third in the order of settlement. It ranks among the smallest states in regard to area, containing only 9,392 sq. m. Its population, in 1870, was 318,800, of whom 580 were colored persons, and 23, Indians.

Educational History.—It was the prevailing custom among the earliest settlers of New Hampshire, like those of Massachusetts, to make immediate provision for the erection of a meeting-house, and of a school-house beside it. Many of the immigrants, especially the Scotch-Irish settlers of Londonderry and vicinity, had received a good elementary education. Having been united with Massachusetts, in 1641, it became subject to the law passed by the legislature of that province in 1642. (See Massachusetts.) The first act of the government of New Hampshire, in regard to schools, after it became a separate province, in 1680, was passed in 1693. This law required the selectmen, in the respective towns, to raise money, "by equal rate and assessment, upon the inhabitants," for the support of schools. In 1719, a law was passed, which was almost an exact copy of the Massachusetts law of 1647, with an amendment increasing the penalty to £20. The original constitution of the state made it the special duty of "the legislators and magistrates to cherish the interests of literature and the sciences, and all seminaries and public schools." An act of the state legislature, in 1789, established the rate of assessment for school purposes, and provided for the examination of teachers. In 1805, towns were authorized to form school-districts; and, three years later, the system of town superintendence was established by law, every town being required to appoint a superintending school committee, whose duty was to visit and inspect the public schools. In 1807, the rate of school assessment was increased; and, in 1818, was fixed at $90; in 1840, it was raised to $100; and by further change, in 1870, to $350, for each dollar of the apportionment for state taxes. Provision was made for a state literary fund in 1821, which was created from the income arising from a tax of one-half of one per cent upon the capital of all banking corporations in the state. In 1827, the school law was revised, and fitted to the wants of the people. It recognized the office of a superintending school committee in each of the several towns, who were required to examine and license teachers, visit and inspect schools, select school books, etc. District or prudential committees were chosen, who constituted the legal agency to hire teachers, and to have the care of the school property. In 1846, a law was passed providing for the establishment and support of teachers' institutes in each county, which continued in force, with little interruption, until 1874, when the law was repealed. A stringent law, made more effective by further legislation, was enacted in 1848, for the purpose of securing public instruction to children engaged as factory operatives. Another important act of that year established the office of state commissioner of common schools. This office was modified four years later, and a state board of education was established, to consist of a commissioner of schools for each county; and, in 1867, a further change took place, creating the office of superintendent of public instruction, the governor and the council with the superintendent to constitute the board of education. In 1874, the state board was abolished, and the duties of the superintendent were somewhat enlarged. In 1870, a law was enacted, establishing a state normal school; and another act, in the same year, required that all children between the ages of 5 and 15 years, unless excused by reason of ill health, should attend a public school or receive private instruction, at least 12 weeks annually. An act of 1872 ordained that "female citizens of adult age may hold the office, and discharge the duties of prudential committee in any district, or of superintending school committee." The *state school officers* have been as follows: (1) *Commissioners of common schools,*—Charles B. Haddock, D. D., 1846—7; and Richard S. Rust, 1847—50. (2) *Secretaries of board of county commissioners:* the office of state commissioner was succeeded, in 1850, by the board of county commissioners of common schools, who organized annually, electing a chairman and a secretary, of whom the latter was the chief officer of the board, and prepared the report to the state. The successive secretaries were, John S. Woodman, A. M., 1850—51; Hall Roberts, A. M., 1851—4; Rev. King S. Hall, 1854—5; Jonathan Jenney, A. M., 1855—7; James W. Patterson, A. M., 1857—61; William D. Knapp, 1861—2; John Wingate, Jr., A. M., 1862—3; Rev. Roger M. Sargent, A.M., 1863—4; Rev. Charles A. Downs, 1864—5; George W. Cate, 1865—6; Rev. R. M. Sargent (second term), 1866—7. During the first two years of the existence of this office, the cause of education made considerable progress, in effecting which the teachers' institutes, conducted with great ability and efficiency, were an important auxiliary. The annual reports of the first five secretaries are especially referred to as documents of permanent value. (3) *State superintendents:* in 1867, the office of commissioner was abolished, and that of state superintendent of public instruction was instituted, which has been filled by the following persons: Amos Hadley, A.M., 1867—9; Rev. Anthony C. Hardy, 1869—71; John W. Simonds, A. M., 1871—3; Daniel G. Beede, who held office for only six months, when Mr. Simonds was re-appointed, and is still in office (1876).—The teachers' institutes, suspended for a few years, were revived during Mr. Hadley's term, and were continued under Supt. Hardy and during the first term of Supt. Simonds; but during Supt. Beede's term (July, 1874) they were abolished.—Many interesting changes have occurred in regard to the character of the teachers employed in the state. For the first century and a half, the teachers were almost exclusively males; and the school-masters employed were well educated. They were characterized by inflexible severity in the maintenance of discipline; and flogging was a common practice. The methods of instruction employed were mechanical, and the text-books crude; among the latter, the most noted were the *Columbian Orator*, the *American Preceptor*, the *English Reader*, Dillworth's *Speller*, and Webster's *Spelling-Book*, with Daboll's or Pike's *Arithmetic*. In 1758, the town of Newton made provision for employing "school-dames"; but the school-mistress was not recognized by the laws of the state till 1808. In their infancy, and on account of poverty, many towns were compelled to hire female teachers, but the prevailing ideas were against that practice. The legal qualification of the mistress was limited, by an act passed in 1808, "to teaching the various sounds and powers of the letters of the English language, reading, writing, and English grammar." Masters were further required, by the same law, to teach "arithmetic, geography, and such other branches as may be necessary to teach in an English school." After the Revolution, many foreign emigrants became school-masters, and so continued for several years, often performing excellent service. The wages of masters, previous to the present century, varied from $4 to $10 per month, with board, which was usually "given" by the families who patronized the school. The mistress received from fifty cents to one dollar and a half per week, with board. For about two hundred years, the division of towns into school-districts was unknown, the situation of the school depending upon the location of the population, not upon any territorial limit. The teacher went from one section of the town to another, holding a school wherever pupils could be found; and when the people required the services of more than one teacher, they were divided into classes, or "squadrons." Although, in 1805, the towns were empowered to form school-districts, the work of subdivision was not completed until 1843, when an act peremptorily ordered it. For a time the district system worked well; but, in 1870, the legislature passed a permissory act, authorizing any town to abolish the division into school-districts, and to organize the whole town as a single district. This act has been adopted in several of the towns. A compulsory attendance law, passed in June, 1871, went into operation July 14., the same year.

School System. —The state superintendent is placed at the head of the public-school system. With limited powers and means, he is expected to "guide and direct the interests of popular education." He prepares and distributes the school registers and blanks for statistical reports; and is required to make a report to the general court, containing an "abstract of the returns of school committees," a "detailed report of his own doings, and the condition and progress of popular education in the state." Each town has a *superintending school committee*, chosen by the people "in such manner, for such terms, with such title, and such powers relating to schools, as they may think proper." These committees are required to examine and license teachers, visit and inspect schools, select school books, and report in writing upon the condition of the schools, at the annual town meeting. They may also, when necessary, withdraw teachers' certificates, and dismiss teachers and scholars. No teacher can receive pay from the treasurer who cannot produce a certificate of license from the committee. Teachers of common schools must be examined in reading, spelling, writing, English grammar, arithmetic, and the elements of geography and history, and in other branches usually taught in these schools. The school committee may prescribe for any school, when, in their judgment, it may be proper, the study of surveying, geometry, algebra, book-keeping, philosophy, chemistry, natural history, and physiology, or any of them, and other suitable studies; and teachers, proposing to teach in such schools, must be examined in those branches. Applicants holding certificates of graduation from the state normal school, may teach in the public schools, without further examination, in those branches which are covered by such certificates. The cities of Concord, Dover, Manchester, Nashua, Keene, and Portsmouth have each a *city superintendent of public instruction*. In each district, there is a *prudential committee*, chosen at the annual meeting, whose duties are to employ and pay teachers, and have the care and safe-keeping of the school property of the district. A number of the members of both superintending and prudential committees are women. The selectmen in each town, and the assessors of each city are required, in April of each year, to make an enumeration of the children of each sex between the ages of 5 and 15 years, in their respective towns and cities, and to report the result to the school committee of the town or city.

School Revenue.—The public schools, free to all attending them, draw their support from three sources; namely, taxation, the state literary fund, and the income from local funds. Towns are required to raise by taxation at least $350 for each dollar of the apportionment to the town for the state tax. Towns and districts are authorized to raise by vote larger sums for the support of schools; and towns are authorized to appropriate money from the tax on railroads. The unexpended balance of the tax upon dogs is devoted to the support of schools, at the expiration of every two years. The state literary fund is disbursed to the towns in proportion to the number of scholars attending the schools. The income from local funds arises from the interest on the donations of individuals to towns and school-districts, the original gifts of "school lots," and the contributions of individuals in order to prolong the schools. The moneys received from town taxes and the literary fund are disbursed to the several districts in proportion to their valuation, or in such other manner as the town may determine. The revenue from the tax on dogs is divided equally among the districts. The various amounts derived ftom local funds are expended agreeably to the conditions of the gift.

Educational Condition.—The whole number of organized school-districts in the state, in 1876, was 2,102; of districts formed under a special act, 31. The total number of schools was 2,498; the number of graded schools, 458, of which 18 were town high schools, and 21 district high schools. The number of school-houses was 2,223. The amount of school revenue for the year 1875 was as follows:

Raised by town taxes	$465,186	
Raised by district taxes	71,600	
Literary fund	24,600	
Local funds	32,346	
Railroad tax	5,781	
Dog tax and contributions	15,460	
Other sources	37.741	
Total		$652,714

The expenditures were as follows:

For teachers' salaries	$450,440	
" new buildings	110,709	
" permanent repairs	31,880	
" miscellaneous expenses	75,017	
Total		$668,046

The following are the principal additional items of *school statistics* for the year ending March 14., 1876:

Number of children between the ages of 5 and 15 (April, 1875), males,	37,314	
females,	34.008	
Total		71,322
Number enrolled in the public schools (1876)		66,699
" of those enrolled pursuing higher branches		4,982
Average daily attendance		48,857
Number of pupils attending academies and select schools		4,982
Average length of the public-school year		18.75 weeks
Number of teachers employed, males	555	
" " " females	3.107	
Total		3,662
Average monthly salary of teachers, males		$41.93
" " " " females		$25.72

Normal Instruction.—The state normal school, established by a legislative enactment, in 1871, is located at Plymouth. Two courses of study are provided. extending over one year and two years, respectively. Certificates of graduation from these courses entitle the holders to teach, the former for a term of three years, the latter for five years. The school is managed by a board of trustees, and taught by a principal and 4 assistants. *Teachers' institutes* were formerly held in the different towns; but, in 1874, they were abolished by state law. Supt. Simonds, in his annual report for 1875, strongly recommends the general court "to appropriate a sum for the proper expenses of teachers' institutes to be held under the direction of the superintendent of public instruction, at times and places approved by the governor of the state."

Secondary Instruction.—This grade of instruction is represented chiefly by the academies and public high schools. The former are usually incorporated. The necessary buildings and appurtenances have been furnished by individual liberality; but the schools are sustained by the tuition fees received from students, and the income from endowments. Phillips Academy, at Exeter, chartered 1781, was the first established in the state; but academies were chartered and opened at Ipswich, Chesterfield, Atkinson, and Gilmanton before the close of the last century; and, in the early part of the present century, academies were established in nearly all the larger towns of the state. Many of these have been displaced by the higher grades of public schools. During the year 1876, the number of academies in active operation was 47, several of which are permanently endowed with commodious buildings, and supplied with excellent instructors and all the necessary appliances for efficient work. Phillips Academy, at Exeter, and St. Paul's School, at Concord, for males exclusively, are devoted to the work of fitting their students for college; the other academies are open to pupils of either sex, and furnish the means of a common, higher English, classical, and ornamental education. The Adams Female Academy, at East Derry, the first incorporated school of its class in New England, Tilden Seminary, at West Lebanon, and the Robinson Female Seminary, at Exeter, are devoted exclusively to the education of females. The number of high schools proper, maintained at public expense, is 39, including 19 town high schools, and 20 district high schools. The report of the state superintendent for 1876 enumerated 86 high schools, seminaries, academies, etc., affording higher instruction to 5,418 pupils. Several of these institutions are classical or preparatory schools; and there is one business college, at Manchester, having 286 male students, and 90 female students.

Denominational and Parochial Schools.—Several of the academies are fostered by distinctive religious denominations, prominent among which may be named, Kimball Union Academy, at Meriden, Gilmanton Academy, and Pinkerton Academy, at Derry, which are under the control of the Congregationalists; the New Hampton Conference Seminary and Female College, at Tilton, under the Methodists; the New Hampton Literary Institution, under the Freewill Baptists; the New London Literary and Scientific Institution, under the Baptists; and, St. Paul's School, at Concord, under the Episcopalians. In the city of Manchester, the Roman Catholics support parochial schools for the education of their children. These schools are graded. Mt. St. Mary's Academy is designed for the higher education of females.

Superior Instruction, etc.—Dartmouth College (q. v.), at Hanover, "the pride of the state," is the sole representative of this grade of instruction. In 1796, a medical department was organized; and, more recently (1852), scientific schools (Chandler Scientific Department), besides which there is the Thayer School of Civil Engineering, organized in 1870, and the New Hampshire College of Agriculture and the Mechanic Arts, established by the legislature, in 1866, on the basis of the congressional land grant, and as a department of Dartmouth College.

The *State Teachers' Association*, incorporated in 1854, was designed for the benefit of teachers and the promotion of the interests of education. During the first years of its existence, it held two meetings annually, in the spring and in the fall, in different sections of the state; but, later, only one annual meeting has been held. Many of the most important measures connected with the progress of education in the state have emanated from its discussions; such as the creation of the office of state superintendent, the establishment of the state normal school, etc. For a few years, the association maintained a state journal of education.

NEW JERSEY, one of the thirteen original states of the American Union, the first settlement in which by Europeans is supposed to have been made, about 1618, at Bergen, by a detachment of the Dutch settlers of New Amsterdam. Its area is 8,320 sq. m.; and its population, in 1870, was 906,096, of whom 30,658 were colored, 16 Indians, and 15 Chinese.

Educational History.—The history of the school system in New Jersey begins just one hundred years prior to the Declaration of Independence. The Presbyterians and Congregationalists, who were the earliest immigrants under English authority, came to this province bringing preachers and school-teachers with them. By the side of the log church, the primitive school-house was erected; and schools, supervised and supported by the church authorities, were established in the early settlements of Newark, Woodbridge, Elizabeth, Middletown, Freehold, Shrewsbury, Piscataway, Perth Amboy, and other places in East New Jersey. The pioneers in West New Jersey were Quakers. To them the school-house was scarcely second in importance to the church or meeting-house, and both were usually under the same roof. The earliest record of any action of a public nature for the establishment of schools is dated November 21., 1676, when the people of the town of Newark resolved at town meeting, "that the town's men have liberty to see if they can find a competent number of schollars, and accommodations for a school-master." "The town's men" found the "competent number of schollars", accordingly, and made partial arrangements for the employment of a "school-master." Further instructions were given at the next town meeting, in the form of the following resolution: "The town hath consented that the town's men should perfect the bargain with the school-master for this year, upon condition that he will come for this year, and do his faithful, honest, and true endeavor to teach the children or servants of those who have subscribed, the reading and writing of English, and also of arithmetick if they desire it, as much as they are capable to learn, and he capable to teach them, within the compass of this year; nowise hindering but that he may make what bargain he please with those as have not subscribed." From this date, the people of the town of Newark never failed to provide for the schooling of their children. The superior claims of the church, however, were recognized; as appears from the following order given in town meeting, September 28., 1714: "Ordered by vote that ye old floor in ye meeting house should be made use of for ye making a floor in ye school-house in the middle of ye town." In March, 1689, the town people of Woodbridge resolved, "that James Fullerton should be entertained as school-master;" and, in 1694, we are informed that John Brown was engaged at a salary of £24 sterling to keep a free school for the next year. In 1701, the people of Woodbridge further resolved that a piece of land, "about 10 rods," be allowed for a school-house, "provided it did not prejudice the highway." As early as 1667, George Fox advised his brethren in New Jersey to establish boarding-schools, "that young men of genius, in low circumstances, may be furnished with means to procure requisite education," and the Shackelwell school was opened about this time, "for the teaching of whatsoever things were civil and useful in creation." In 1683, an island in the Delaware, opposite the settlement of Burlington was set apart for educational purposes, the revenue derived from the rent or sale of which was reserved for the education of children in the adjoining settlements. The income of the fund thus derived is still used to assist the cause of education by the school officers of the present city of Burlington. This was the first school fund established in the province, and, it is believed, in America. The first school law of the state was enacted by the general assembly of East New Jersey, at Perth Amboy, on the 12th of October, 1693. It reads as follows: "Whereas the cultivating of learning and good manners tends greatly to the good and benefit of mankind, which hath hitherto been much neglected within this province, *Be it, therefore, enacted* by the governor, council, and deputies in general assembly now met and assembled, and by the authority of the same, that the inhabitants of any town within this province shall and may, by warrant from a justice of peace of that county, when they think fit and convenient, meet together and make choice of three more men of said town, to make a rate for the salary and maintenance of a school-master within the said town, for so long time as they think fit; and the consent and agreement of the major part of the inhabitants of the said town shall bind and oblige the remaining part of the inhabitants of the said town to satisfy and pay their shares and proportion of the said rate; and, in case of refusal or non-payment, distress to be made upon the goods and chattels of such person or persons so refusing or not paying, by the constable of the said town, by virtue of a warrant from a justice of the peace of that county, and the distress so to be sold at public vendue, and the overplus, if any be after payment of the said rate and charges, to be returned to the owner." In 1695, this act was amended, providing that three men should be chosen yearly in each separate town to have "power to appoint the most convenient place or places where the school shall be kept, that as near as may be the whole inhabitants may have the benefit thereof." Under the operation of this law, schools were established in all parts of the province, whenever a majority of the inhabitants desired them. The first step toward the establishment of a state school fund was the passage of an act, on the 9th of February, 1816, which directed the treasurer to invest in the public 6 per cent stocks of the United States the sum of $15,000, which arose from the payment of the funded debt, and from the dividends of the stocks held by the state in the Trenton Bank, and, at the end of every year to invest the interest on the capital in the same manner. This sum was increased by an act of the legislature in 1817. In 1818, the governor, the vice-president of councils, the speaker of the assembly, the attorney-general, and the secretary of the commonwealth were appointed "trustees for the control and management of the fund for the support of free schools." The whole amount of the fund was then increased to the sum of $113,238.78. In 1820, a law was passed authorizing the inhabitants of any township to raise by taxation money for the education of paupers and the children of such poor parents residing in the township as are, in the judgment of the township committee, unable to pay for schooling the same. This was the first general act which authorized the township to raise money for the support of schools. The idea that the money raised under this law was to be used for the purpose of educating paupers and poor children only, became general at this time, and remained a feature of all school enactments in the state till the year 1838. In 1824, the legislature provided that one-tenth of all the state taxes should every year be added to the school fund; and, four years later, the people were authorized to raise funds in town meetings, to erect or repair school-houses. In 1828, a "central committee" on education was appointed by a convention held at Trenton, to canvass the state and collect statistics from every county; and committees were appointed in the several counties, and in the majority of townships, to aid the central committee. A summing up of the reports of these committees revealed the fact that more than one-third of the children in the state were without schooling of any kind. One of the county reports made at that time was remarkable from the fact that in it was embodied the idea of a normal school. Among other suggestions, the chairman of the Essex county committee said: "I very much wish that some plan of improvement may be attempted to raise the tone of feeling respecting our common schools. I have thought of no plan better than to establish a high school for the sole purpose of educating young men for teachers." The result of the labors of this "central committee" was an awakened public interest, which led to the passage of the school law of 1829 — the first comprehensive and practical school enactment of the state legislature. This provided for an annual appropriation of $20,000, to be apportioned for school purposes among the several counties in proportion to the amount of taxes paid by each. It also provided for the election of school committees in each township, who were required to divide the township into convenient school-districts, to examine and license teachers, to visit and inspect the schools at least once every six months, and to make a report of their condition, which report was read at the annual town meeting, and was then sent to the governor to be laid before the legislature. They were also empowered to call annual district meetings, at which three trustees were chosen, whose duty it was to provide suitable school-houses, and to determine how many months during the year the schools should be kept open. They also prepared a list of children in the district between the ages of 4 and 16 years, which was used as the basis for the apportionment of the public money. In 1831, the act of 1829 was repealed. and a new law enacted, the most important features of which were that the state appropriation should be applied, to the education of poor children exclusively, and that the public money, which had before been paid to the trustees of the school-districts, should now be paid to the several schools in the township, whether they were public, private, or parochial. This latter change was made in obedience to the demands of the religious denominations of the state, under whose auspices schools had been established throughout the state. By this law, also, district boundary lines were abolished, and teachers were not required to be examined. In 1838, the dissatisfaction with the school system was so general that a convention was called to re-organize it. This convention assembled at Trenton, on the 16th of January, and appointed a committee to issue an address to the people. The result of this spirited action was, that the legislature, thoroughly informed of the temper of the people, repealed the pernicious act of 1831, and re-enacted a law, which contained, in an improved form, all the characteristic features of the act of 1829. The state appropriation was increased to $30,000; district boundaries were restored; money was appropriated to districts for the benefit of the public schools exclusively; and townships were required to raise by taxation, for school purposes, a sum equal to double the amount received from the state. The minimum age of school children was changed from 4 years to 5; and a board of examiners for each county was created, with authority to examine teachers and to issue county certificates. No reference was made to pauper or poor children. In 1845, a supplementary act was passed, authorizing the trustees of the school fund to appoint a state superintendent of public schools for the counties of Essex and Passaic; but other counties might, at any time, come under the provisions of the law by resolution of the board of freeholders. The jurisdiction of the state superintendent was not extended over the whole state till 1846. In that year, all previous school enactments were repealed; and a comprehensive law, including the most important features of the repealed acts, with several new provisions, was enacted. This law remained in force till 1867. Its distinctive feature was the creation of township superintendents, who were required, in addition to other duties, to visit the schools once every quarter, and to make a report of their condition to the state superintendent. In 1851, the annual appropriation was increased to $40,000. The act of that year provided, also, that the public money should be apportioned to the counties in the ratio of their population, and to the townships in proportion to the number of children between the ages of 5 and 18 years; and no township was allowed to raise by taxation, for school purposes, more than $3 annually for each child of school age. In 1854, teachers' institutes were established by law, and $100 was annually appropriated to each institute. The following year, the legislature provided for the purchase of a copy of Webster's Dictionary for each school in the state; and, the next year, for a copy of Lippincott's Gazetteer. In 1850, the normal school was established. In 1858, the annual appropriation was increased to $80,000. The state board of education was established in 1866. It consisted of the governor, attorney-general, comptroller, secretary of state president of the senate, speaker of the house, and the treasurer and trustees of the normal school. In 1867, the act of 1846 and its amendments were repealed, and the law now in force was enacted. In 1871, all the public schools of the state were made free; and, in 1874, a compulsory school law was enacted, by which every person having charge of a child between the ages of 8 and 13 years is required to see that such child has, at least, twelve weeks' schooling in each year, six weeks of which must be consecutive. The state superintendents have been: T. F. King, 1845—52; J. H. Phillips, 1852—60; F. W. Ricord, 1860—64; C. M. Harrison, 1864—6; and Ellis A. Apgar, from 1866 to the present time (1876).

School System.—The *state board of education* is intrusted with the educational interests of the state. It is composed of the governor, secretary of state, attorney-general, comptroller, president of the senate, speaker of the assembly, treasurer of the state normal school, and the trustees of the same, at present 14 in number. This board exercises a general supervision over the schools, appoints county superintendents, prescribes rules for holding teachers' institutes, and makes an annual report to the legislature. It appoints, also, the *state superintendent of public instruction*, who is, *ex officio*, its secretary. His term of office is 3 years. He is required to have his office in the state house, to exercise a general supervision over the schools, and to make an annual report to the state board. *County superintendents* are required to examine teachers and grant certificates, to apportion the school money, and to perform the other duties usually devolving upon such officers. In addition to the certificates granted by county superintendents, a *state board of examiners*, consisting of the state superintendent and the principal of the normal school, is authorized to grant certificates valid in any part of the state. *County boards of examiners*, composed of the county superintendent and 3 associates chosen by him, and examiners appointed by the city boards of education, also grant teachers' certificates valid, respectively, in the counties and cities where issued. *Township boards* are composed of the district trustees of each township, and meet at such times and places as the county superintendents designate, for the purpose of consultation with the latter in regard to the management of the schools. Each city in the state constitutes one school-district; but, in the country, a district usually comprises only the territory and inhabitants necessary to support one school.—The schools are supported mainly by a direct state appropriation, which amounts to about $1,300,000 annually. This sum is raised by a tax of 2 mills on every dollar of the property of the state. In case the amount thus derived from the state, however, is not sufficient to maintain the schools nine months in the year, the townships are still authorized to vote school money; and the money needed for building and repairing school-houses is still raised by district tax. The amount of the permanent school fund was largely increased, in 1871, by a gift from the state of the proceeds of the sales and rent of all riparian lands between high and low water mark—a sum the future value of which has been variously estimated at from $5,000,000 to $10,000,000. A free library system exists in the public schools, and state aid is extended to such districts as raise money for the purpose. Nearly 400 free-school libraries have been established in this way. The school age is from 5 to 18 years. Corporal punishment, and all religious exercises, except the reading of the Bible and the saying of the Lord's Prayer, are forbidden.

Educational Condition. — The number of school-districts, in 1876, was 1,368; the number of school buildings, 1,532; of school departments under the charge of one teacher each, 3,046.

The *school revenue* for the year 1876 was:

Two mill tax from the state	$1,225,462.19	
Additional state appropriation, including income from permanent fund	100,000.00	
Township school tax	26,548.50	
Interest of surplus revenue	30,523.54	
District and city tax for teachers' salaries	324,988.34	
District and city tax for buildings and repairs	407,767.70	
Total appropriated for school purposes		$2,115,290.27
Total value of school property		$6,449,516.00

School statistics for the year ending Aug. 31, 1876:

Number of children of school age in the state		314,826
" " " enrolled in public schools		196,252
Average attendance in public schools		103,520
Number attending private schools		41,964
Number of teachers, males	978	
" " " females	2,306	
Total		3,284
Average monthly salary of male teachers		$66.42
" " " " female teachers		$37.39

Normal Instruction. — Besides the state normal school at Trenton, normal schools or classes have been established at Newark, Jersey City, Paterson, and in some other cities of the state. The state normal school, with its adjuncts, the model school, and the Farnum preparatory school, at Beverly, constitutes the special means employed by the state for the education of teachers. The normal school is supported partly by an annual appropriation of $20,000. The course of instruction occupies 3 years. Graduates from the advanced course receive state certificates of the second grade, valid for 7 years; graduates from the elementary course receive certificates of the third grade, valid for 5 years. These certificates entitle the holders to teach in the public schools of the state, without further examination. The number of the former class, in 1875, was 28; of the latter, 14. The Farnum preparatory school receives aid from the state, and serves as a stepping-stone to the state normal school. The students from its normal department receive no diplomas, and are not authorized to teach in the public schools without examination.

Secondary Instruction.—High schools in connection with the public-school system have been established in Newark, Jersey City, Paterson, New Brunswick, and Trenton. Besides the high schools and academies, secondary instruction is given at many of the private schools and seminaries in the state. Three business colleges exist in the state, one each at Trenton, Newark, and Elizabeth. Two of them, in 1874, reported 10 instructors and 353 students.

Private, Denominational, and Parochial Schools.—The number of non-sectarian private schools is 240; of denominational schools, 106.

Superior Instruction.—The colleges of the state, exclusive of those for females, are the following:

NAME	Location	When founded	Denomination
Burlington College......	Burlington	1846	P. Epis.
College of New Jersey....	Princeton	1748	Presb.
Rutgers College..........	N. Brunswick	1771	Reform.
Seton Hall College.......	So. Orange	1856	R. C.

There are five colleges for the superior instruction of women: St. Mary's Hall, Burlington; Trinity Hall, Beverly; Bordentown Female College; Ivy Hall, Bridgeton; and the Pennington Seminary and Female Collegiate Institute.

Professional and Scientific Instruction.—The John C. Green School of Science is a department of the College of New Jersey, at Princeton. It provides two courses of study, and confers degrees expressive of proficiency in each. Nearly $600,000 have been expended on this school, its name indicating the principal contributor. The scientific school of Rutgers College, endowed principally by the sale of agricultural land scrip, to the amount of $116,000, has been constituted by an act of the legislature the college for agriculture and the mechanic arts. It has a course in chemistry and agriculture, and one in civil engineering and mechanics. Connected with the former, is a model farm, on which the claims of different systems are put to a practical test. State students, to the number of 40, are admitted on the recommendation of the county superintendents, and are instructed free of charge. The Stevens Institute of Technology, at Hoboken, was founded by Edwin A. Stevens, by a gift of land, and $650,000 for buildings and endowment. It was opened in 1871 as a school for special scientific training, but provides instruction in other branches as well. Connected with it is a high school, which is designed as a preparatory department for the Institute. The latter has extensive collections, and a library of 5,000 volumes. Its course is 4 years, on the completion of which it confers degrees. The theological seminary of the Reformed Church is substantially a department of Rutgers College, and is the principal training school in the United States for ministers of that denomination. In 1874—5, it reported 4 professors and 39 students. The theological seminary of the Presbyterian Church at Princeton was organized in 1812, and has a 4 years' course for graduates from the College of New Jersey, or for others who have received a classical education. In 1874, it had 7 instructors and 97 students. The German Theological School at Bloomfield was founded in 1869, by the Presbyterians, for the purpose of providing German-speaking instructors for the large and rapidly increasing German population of the United States. It has a theological, and an academic department, the principal study in the latter being the German language. In 1874—5, it had 5 instructors and 24 students. The Drew Theological Seminary, at Madison, was opened in 1867 by a fund of $250,000, given by Daniel Drew for its establishment, to which additions have, from time to time, been made, making a total of nearly $1,000,000. It is under the auspices of the Methodist Episcopal Church, bishops of which are, *ex officio*, members of its board of supervision. The grounds are 95 acres in extent. There are 3 seminary buildings, besides professors' residences, and a library containing 12,000 volumes. The introductory course is 2 years; the regular, 3. To the latter, only college graduates are admitted. In 1874—5, it reported 9 instructors, 9 lecturers, and 127 students.

Special Instruction.—No provision has thus far (1876) been made by the state for the instruction of deaf-mutes, blind, or feeble-minded persons; but about $40,000 is annually expended by the state for their care in the institutions of other states. Their number, according to an inquiry instituted by the legislature in 1873, was 500 deaf-mutes, 600 blind, and more than 1,000 feeble-minded.

The State Industrial School for Girls was established at Trenton by an act of the legislature, in 1871, "for the reformation of girls between the ages of 7 and 16 years." In 1874, there were 19 inmates. The State Reform School was opened at Jamesburg, in 1867. The institution is rather reformatory than penal, and, in addition to moral training, provides intellectual instruction in elementary branches. In 1874, the total number of its inmates was 298; the average attendance, 184.

NEW JERSEY, College of (popularly called **Princeton College**), at Princeton, N. J., founded under the auspices of the Presbyterian Synod of New York, which then included New Jersey under its jurisdiction, was opened in May, 1747, at Elizabethtown (now Elizabeth) and the same year was removed to Newark, whence it was transferred to Princeton, in 1757, upon the completion of a college edifice, which at the suggestion of Gov. Belcher was named Nassau Hall, "to the immortal memory of the glorious King William III., of the illustrious house of Nassau." From this circumstance the college itself is often called Nassau Hall. It obtained a charter in 1746, and a more liberal one in 1748. The college buildings, including a library, gymnasium, observatory, society halls, and the president's house, besides various college halls, are mostly of stone, and occupy a well-shaded campus on the main street of the town. The contributions to the college within the last eight years amount to $1,500,000. The college and society libraries contain about 55,000 volumes. The institution comprises an academic department and the John C. Green School of Science (opened in 1873), and has a preparatory school connected with it. In the academic department, all the studies of the freshman and the sophomore year are required; in the junior and the senior year, a considerable range of elective studies is provided. The School of Science has two regular courses, one of two years, for graduates of colleges, on the completion of which the degree of Master of Science is conferred, and the other of four years, for others, on the completion of which the degree of Bachelor of Science is conferred. The cost of tuition in the academic department is $75 per annum; in the School of Science, $120. There are several prizes and scholarships obtainable by deserving students. Six fellowships have been established, four of which yield $600 each, the other two yielding $250 each. These are open for competition to members of the graduating class who intend to pursue a post-graduate course of one year. In 1876, there were 18 professors, 6 other instructors, and 483 students (438 in the academic department, and 45 in the School of Science). The whole number of graduates is about 4,850, of whom nearly 2,750 survive. The presidents of the college have been as follows: Rev. Jonathan Dickinson, May to Oct., 1747; Rev. Aaron Burr, 1748—57; Rev. Jonathan Edwards, Jan. to March, 1758; Rev. Samuel Davies, 1759—61; Rev. Samuel Finley, 1761—6; Rev. Dr. John Witherspoon, 1768—94; Rev. Dr. Samuel Stanhope Smith, 1795—1812; Rev. Dr. Ashbel Green, 1812—22; Rev. Dr. James Carnahan, 1823—54; Rev. Dr. John Maclean, 1854—68; Rev. Dr. James McCosh, from 1868.

NEW JERUSALEM, Societies of the, the name assumed by the ecclesiastical organizations of the followers of Swedenborg, the Swedish theosophist, who died in 1772. Swedenborg himself did not make any provisions for organizing his followers into an independent religious body, and the first Society of the New Jerusalem was not formed until 1788, when Robert Hindmarsh and others established public worship in London. At present, there is a general conference of the New Church in England, with about 4,000 members, and another in the United States, which, in 1875, had about 5,000 members. There are, besides, a number of independent societies in the United States and on the continent of Europe, with an aggregate of about 1,000 members. The general conference in the United States founded, in 1866, a theological school at Waltham, Massachusetts; but no term was held in the year 1875—6, as no students applied for admission. A college under the control of the Church was chartered, in 1850, and organized, in 1851, at Urbana, Ohio; and, in 1874, it had 14 students. There is also a school under the control of the general conference of England. Sunday-schools are connected with nearly all the societies, both in the United States and in England.

NEW MEXICO, one of the territories of the United States, first made known to Europeans, about 1537, by the visit of a Spanish expedition under Alvar Nuñez. It was ceded to the United States in 1848, at the close of the Mexican war, and was organized as a territory in 1850. Its area is 121,201 sq. m.; its population, in 1870, was 91,874, of whom 90,393 were whites; 172 colored persons; and 1,309, non-tribal Indians.

Educational History. — Provision was first made for giving elementary instruction to the youth of the province of New Mexico in 1822. Owing to the sparsely settled condition of the country, and to the fact that the peons, or serfs, not included within the privileges of the act, constituted a majority of the inhabitants in the country districts, the operation of the law was confined to the cities and towns. The salaries of the teachers were small, those in the capital being paid by appropriations from the public treasury; while those in the country were paid by the district officers, from money taken either from the general treasury, or derived from local taxation. Under this system, no permanent institution of learning was founded. In 1852, however, the Academy of Our Lady of Light was established at Santa Fe by the Sisters of Loretto; and, from an experimental beginning, with 7 boarders and a few other scholars, it has now become firmly established as a permanent institution, with an influence which has not only led to the establishment of branch schools under its own direction, but to the foundation of other independent schools in various parts of the territory. In 1855, and again in 1861, attempts were made by the legislature to organize a system of public schools by general taxation; but the public sentiment of the people was opposed to the measure, and the laws were repealed. No other school law was enacted till 1871—2. In that year, the assembly passed an act, which was ratified by the people at the polls, and, which, with slight modifications, in 1873—4, is the present public-school law of the territory. In accordance with recommendations made by the governor, in 1875, a bill was introduced in the council, proposing a non-sectarian system of public-school education, but it was defeated in the house by a vote of 14 to 10.

School System.—The school law provides that the educational interests of the state shall be intrusted to local *boards of supervisors* and *directors of the public schools*, to be elected for two years, in each county, respectively. These boards consist of three members each, with the probate judge of the county, who is president, *ex officio.* They have the entire control of the schools and of the school funds, each member receiving for his services $3 a day. The want of uniformity, thus engendered, in the administration of the schools, has been a serious cause of complaint. The area, however, over which each board exercises supervision being limited, the existence of any other officers is rendered unnecessary. The *territorial superintendent*, an officer created in 1873—4, receives the annual reports from the local boards, and transmits them to the governor. He is, also, territorial librarian, *ex officio.* The school fund consists of 25 per cent of the tax on property, $1 poll tax for every male citizen above the age of 21 years, and any surplus, of more than $500, in the treasury of any county, after paying the current expenses of such county.

The public schools are almost entirely confined to the teaching of elementary branches. Owing to the early settlement of the country by the Spaniards and the Mexicans, and its almost exclusive possession, till very recently, by them or their descendants, Spanish is the language spoken by the great majority of the people. The control of the schools, also, being entirely local, that language has been introduced into them, in some cases exclusively, and in others jointly with the English language. The Catholic religion, also, is, for the same reason, generally taught in them. The legal school age is between 7 and 18 years. The secretary of the territory is the acting superintendent of public instruction. W. G. Ritch has been the secretary since 1873.

Educational Condition.—The number of public schools in the territory, reported in 1875, was 138, of which 97 were for boys; 8, for girls; and 33, mixed. Some, however, were not reported. English and Spanish were taught in 38 schools; Spanish alone, in 86; and English alone, in 7. The revenue for the support of the schools, derived from the sources above mentioned, amounted, in 1875, to $25,473.46. The principal items of *school statistics* are the following:

Number of pupils in attendance		5,151
" " teachers, males	132	
" " " females	15	
Total		147
Average number of months schools were kept		6.6
Expenditures for teachers' wages	$15,432	
" " rent and books	1,800	
" " other purposes	1,657	
Total		$18,889
Average teachers' wages per month		$16.58
Number of public schools supported out of the school fund, but controlled by religious societies		10

Private and Parochial Schools.—Under this head must be classed all the convent and mission schools and academies, and many private schools. Of these, 12 are Roman Catholic, 6 for boys and 6 for girls; 8 Protestant, for both sexes; exclusive of 13 non-sectarian schools, including 7 Pueblo Indian schools, in which there were enrolled, at the close of 1875, 242 pupils; and of this number, 180 were in daily attendance during the winter months, and about one-half that number during the summer months. The number of scholars able to read and write was 47, and 15 could work in the first four rules of arithmetic; while spelling, reading, writing, arithmetic, and geography were all successfully taught in English. But few of the children, however, understand English to any extent. Of the Protestant schools, 4 are Methodist Episcopal Mission schools. Only 3, in all this number, teach the higher branches. The average attendance of pupils, in all these schools, in 1875, was 1,259; the number of male teachers, 41; female teachers, 40. The average number of months the schools were kept was 9.4. Many of these schools receive a yearly donation from the public-school fund.

No special provision has been made for *superior instruction.* Of the schools above referred to, 3 give instruction in the higher branches, including Latin. The want of a uniform public-school system in the territory has long been felt, and has been a subject of consideration by its governors and many of its leading men. The present school law, though faulty in many respects, is regarded as evidence of a decided step in advance of the position taken as late even as 1861, when a public-school law was voted down almost unanimously. "While the parochial schools," says secretary Rich, "are, without doubt, the best schools we have had in New Mexico, there is rather more than a suspicion that the advocates and supporters of some of them have a special interest in paralyzing the efficiency of the public schools, and in keeping them in bad repute, as a means of maintaining their own superiority"; and again, "make the public-school system of New Mexico all it is practicable to be made at this time, and the result will be preparatory schools, not only for the state, but for higher education. The present denominational schools would then, under the free push of these preparatory schools, be forced, like the sects they represent, to stand on their own merits, to enlarge and liberalize their curriculum of study, and brush up their diction and scholarship."

NEW ORLEANS, the capital and metropolis of the state of Louisiana, nearly co-extensive with the parish of Orleans. It was first permanently settled in 1723, under the French, who held possession of it till 1769, when it passed under Spanish rule, and so continued till 1801, when the French regained possession of it, but ceded it, as a part of Louisiana, to the United States, in 1803.

Educational History.— As might be expected from the manner in which the city was founded, the first instruction given was in connection with the religious establishments of the Roman Catholics. The earliest school appears to have been that of the Ursuline nuns, which was founded by the French government in 1733, and carried on in the same place till 1824, when it was removed to its present location, about two miles from the center of the city. It was a seminary for young ladies, and, in 1845, had 120 pupils. The city, during all the early years of its existence, had no public-school system, the instruction of children and youth being given in private or denominational schools, or in charitable institutions. Of schools of the first class, many existed, but no record of them remains. In 1836, the Female Orphan Asylum was opened with 6 children. In 1840, more extensive buildings were completed for it, in which it gave instruction to about 100 children. Since then, an average of 145 have been annually instructed there, and, at a suitable age, apprenticed. In 1845, the Carmelite Convent, which was occupied by nuns of that order, supported two schools, one white, the other free colored. At the same time, the Poydras Female Orphan Asylum gave instruction to 120 children annually. Other institutions of the kind, which have taken a greater or less part in the work of education, are the Male, the Catholic Male, and the Milne Orphan Asylums—the last endowed by Alexander Milne, in 1839. Two reading-rooms, also, have been in existence for many years.—The first decided change in the common-school system was in 1841, the city being divided into 3 municipalities and containing, at that time, about 103,000 inhabitants. On the 14th of February, 1841, the legislature passed an act authorizing each municipality to establish schools, each parish being controlled by a board of 5 administrators, who reported annually to the secretary of state. The 2d municipality selected 12 citizens as a board of directors of public education, granting them almost unlimited powers. They employed as superintendent, J. A. Shaw, who was thoroughly acquainted with the New England system of public schools, according to which it was proposed to re-organize the schools of New Orleans. Under his supervision, the schools began with 13 pupils, and, in 2 years, numbered 1,061 in actual attendance, with an enrollment of double that number. These efforts for the improvement of the schools encountered strong opposition, at first, but were attended with such unqualified success as ultimately to secure general approbation. The influence of this improvement, also, soon extended beyond the limits of the municipality in which the movement had its origin. In the 3d municipality, the old method was pursued for a long time, instruction being given in English, French, and Spanish; but here, as well as in the 1st municipality, the improvement in school organization and methods gradually made progress, and, in 1844, the system throughout the city had become uniform. By the state constitution, then recently adopted, the establishment, in New Orleans, of a college to be called the University of Louisiana was directed. It was to consist of four faculties; and one of them, that of medicine, was immediately opened. The Public School Lyceum and Society Library was organized in 1844. The object was to provide a library for the youth of the 2d municipality by the voluntary subscriptions of the public school children and others. The officers were those of the public schools, with the addition of the mayor, recorder, and aldermen as members, *ex officio*. The People's Lyceum and the Young Men's Literary Association were similar institutions.

School System.— The public schools of the city are governed by a board of school directors consisting of twenty members, one from each representative district, one additional from each municipal district; the administrator of finance of the the city, *ex officio*; and the superintendent of the sixth division, *ex officio*, who has the right to speak, but not to vote, in the board. The district members are appointed by the state board of education, each for a term of three years, one-third of the number retiring annually. The superintendent of the sixth division is the city superintendent. The board of school directors appoints a committee on teachers, who, with the city superintendent, examine applicants for employment as teachers. Thus the public-school system of the city is under state control, though supported by a city tax. The salaries of teachers vary from $2,400 a year for the principal and $1,500 for associate teachers, in the boys' high school, to an average of $814 for teachers of a lower grade.—The number of public schools is 76, including a central high school for boys, 2 high schools for girls, and 73 schools of an inferior grade. The course of instruction in the central high school for boys embraces English studies, mathematics, natural sciences, the classics, French, and book-keeping; that of the girls' high schools is similar, with the exception of book-keeping and classics. The principal items of *school statistics* for 1875 are as follows:

Number of children of school age............		70,093
Number of pupils enrolled in the schools.....		26,251
Average daily attendance......................		18,719
Number of teachers, males............	33	
" " " females..........	417	
Whole number of teachers.................		450
Total receipts for school purposes........		$373,847.99
" expenditures " "		$460,128.63
Average salary of teachers per month....		$67.82
Total value of the school property........		$775,000.00

The private schools exceed in number the public schools; and, in 1875, were attended by 14,235 pupils, giving employment to 471 teachers. Most of these schools are attached to religious bodies, and the great majority are for females. The schools for colored children, both public and private, are separate; though a few colored pupils attend the schools for white children. There is great opposition to mixed schools. (For an account of the higher educational institutions of New Orleans, see Louisiana.)

NEWSPAPERS. The objection is frequently made to the character of the instruction ordinarily imparted at school, that it has little relation to the concerns of daily life. This want of relation sprung originally from the fact that the literary class, in earlier times, was a class apart, having only slight connection with the mass of people who, possessing few political rights, were unworthy of consideration. The instruction given, therefore, was purposely of a kind to emphasize the exclusiveness of the educated class. Under the changed political conditions of our day, however, the tendency has steadily been to equalize the two classes in intelligence— to lift up the masses to the level of the educated, on the one hand, and, on the other, to bring the studies of the school and college more into accordance with the daily life of the majority. Traces of the original exclusiveness still remain, however, in the antiquated and unpractical character of the instruction, as mentioned above. Almost every youth, on entering upon the business of life, becomes conscious of this with chagrin. The arithmetic that he studied, for instance, seems to have little application to the concerns of daily life; the book-keeping which he mastered with so much difficulty, seems now, at this later date, to have been filled with theoretical cases which have no parallels in actual experience; even the geography, in which he attained such proficiency, has little place in his daily routine; while algebra, geometry, and many other studies, have none at all. The result is a feeling of inferiority when he is brought into contact with others of his age whose training has been entirely that of practical life, which leads him to suspect that his time has been wasted. Not till long afterwards, perhaps, does he recognize the fact that the principles on which both theoretical and practical knowledge are based, are the same, and that the ability to apply these principles was his chief want. The feeling of disappointment referred to might have been entirely removed, if, in his instruction, the teacher had kept constantly in mind, not the mental discipline alone, but the mental discipline and the adaptability to the affairs of life of the knowledge used in acquiring that discipline. One of the most useful instruments for accomplishing this double purpose is the newspaper. The arithmetic which is now taught by the use of unusual and improbable examples, could be made a living and interesting thing, by the use of problems to be found in its pages, which introduce the actual prices of articles in daily use. Interest, discount, exchange, the price of bonds and stocks, could be made so familiar to the pupil in this way, that the change from school to counting-house, which is now attended with such a want of ease and so much disappointment, would seem but the continuation of study in another class.—Reading, also, if taught from the newspaper, would familiarize the pupil with the terms used in the daily conversation of professional and business men; and, through the reports of proceedings in every field of human activity, fresh interest could be aroused in studies already taken up, while attention could profitably be called to those which are ordinarily pursued in more advanced courses; and a partial preparation for them could thus unconsciously be made. Thus the study of geography would receive increased attention, if it could be connected with the reports of the interesting events from all parts of the world which are daily chronicled, by inquiring into the position on the map, population, form of government, etc, of the different countries referred to. By following, in this way, the records of campaigns and battles, a knowledge of the topography of the country could be obtained almost without effort, which would be easily retained in the memory of the most apathetic scholar; while opportunity could, at the same time, be taken for digressions into its history. Through its reports of strikes, labor troubles, and co-operative associations, the newspaper could also be made the medium for inculcating, in a familiar and practical way, the rudiments of political economy, usually so dry and uninteresting; while the accounts of great engineering feats, astronomical discoveries, exploring expeditions, and voyages of discovery, would be more eagerly listened to, if the pupil were made to understand that the algebra, geometry, or geography which he daily studies has an intimate and fundamental relation to them all. The thought, also, that he might one day take part in similar work, would act as a spur to renewed exertion. Any means within the teacher's reach of divesting the studies pursued of their dry, text-book character should be taken advantage of; and this cannot be done in any way so easily as by investing them with a human interest, by showing that men and women similar to those with whom he daily associates are the actors in all these stirring events. For this purpose, hardly any medium is superior to that of the daily paper. The objections formerly made to its use, that some of the facts were unfit for youthful minds to know, and that the hasty manner in which they were reported rendered their accounts not only worthless as models but injurious, are no longer valid. To the first, it may be said that newspapers are now so universally read that pupils can hardly fail to see them or hear their contents discussed; and to the second, that active competition having brought into the employ of the newspaper so large a share of the best talent, specimens of composition may now be found in any influential paper, not only unexceptionable in matter, but worthy of imitation for lucid statement and grace of expression. The ability, independence, and rapidly-increasing circulation of the daily press are fast constituting it a powerful educator; and, in countries where the necessities of daily life leave little time for that higher education which demands leisure and a competency for its accomplishment, a double purpose would be served by using it as a means of instruction, as not only giving to the minds of the pupils practical culture, but also habituating them to the constant use of the newspaper as, perhaps, their chief source of intelligence.

NEW YORK, one of the thirteen original states of the American Union, having an area of 47,000 sq. m., and a population, according to the census of 1870, of 4,330,210, of whom 52,081 were colored persons; 5,144, Indians; and 29, Chinese. Of the total population, the number, 10 years old and upward, reported as unable to read was 163,501; unable to write, 239,271. Of the latter, 168,569 were foreign born. According to the state census of 1875, the population was 4,705,208.

Educational History.— This topic will be treated under the following heads: (I) The establishing of schools; (II) The mode of maintaining them; (III) The mode of supervising them; (IV) Special provisions of legislation.

I. The Dutch, by whom the first settlements were made in the state, brought with them the ideas and institutions of the father-land, among which those of the church and the school were not the least prominent. As early as 1629, the West India Company, in its charter, enacted that the *patroons* and colonists should, " in the speediest manner, endeavor to find out ways and means" whereby they might supply a minister and a school-master. This is the first official act relating to public education in the state. The first regular school-master in New Amsterdam was Adam Roelantsen, who commenced his school in 1633, and continued it till 1639, when he was succeeded by Jan Cornelissen, and he by William Vestens, during whose administration of this school, a second was established, in 1652. (See New York City.) The Company and the church united in paying for the services of these early masters. The first school in Brooklyn was established in 1661. (See Brooklyn.) The first school at Flatbush was established in 1659, under Adrian Hegeman; and one was opened in Newtown, in 1661, under Richard Mills. The first school-master in Albany was Andries Jansz, in 1650. In 1659, a Latin school was established in New Amsterdam, and Alexander Carolus Curtius was sent out by the Company to serve as rector, with permission also to practice his profession as physician. His services, particularly in regard to discipline, were not satisfactory, and he was superseded, the Rev. Ægidius Luyck being appointed in his place, under whom the school flourished, children being sent thither from Virginia, Fort Orange, and the Delaware, to receive a classical education.— Up to the time of the English occupation, the fundamental idea was that of the free school. The proper authorities provided a certain salary, and the school-master was bound by his contract, to the limit of a specified number, to instruct his pupils free of tuition; and so faithful and earnest were the authorities and clergy, that, at the time of the final surrender to the English (1674), schools existed in almost every town and village within the limits of the colony. The branches generally taught were reading, writing, arithmetic, and the catechism of the Dutch Church.—Private schools also existed during the entire period, at least from a time anterior to 1644; but no one was allowed to teach a school without permission from the director-general and council, who acted in conjunction with the church authorities. This custom was afterward followed by the English, who substituted the archbishop, bishop, or ordinary, in place of the minister and consistory. The English, on their accession, paid no great attention to education, for obvious reasons. The settlements were all Dutch. The prevailing religion was that of the Church of Holland. After the surrender, the Dutch Schools were continued, holding the same relation to the Dutch Church as previously; for by the articles of capitulation, 'liberty of conscience in divine worship and 'church discipline" was secured to the Dutch, "with all then accustomed jurisdiction with respect to the poor and orphans". The English knew of no public schools except those in connection with the church. They did, however, all that, under the circumstances, was practicable. The very next year after Stuyvesant's capitulation (1665), Gov. Nicolls licensed John Shute to open an English school in Albany; and frequent licenses for private schools, at various places, were granted by the succeeding governors. In 1687, a Latin school was opened in the city of New York, under the sanction of the English government; and, in 1702, an act was passed for the "encouragement of a grammar free school in the city of New York," and for the raising annually of £50 for its support for seven years. This school does not seem to have been established previous to April, 1704, when Mr. George Muirson was duly licensed by Gov. Cornbury as its master. Cornbury is also credited, at this time, with the establishment of two other English schools in the city. Of all the English governors, he was the most zealous and aggressive in behalf of the English Church and schools. What Andros and Fletcher would fain have accomplished legally, or by persuasion, he boldly attempted by an exercise of authority. He prohibited the ministers of other denominations, and school-masters, from officiating without his special license. The Dutch schools on Long Island, too weak or too timid to contest the matter, were broken up by him; but the Dutch church in New York stood up for its chartered rights, and called and settled its own school-masters. The act of 1702 expired by its own limitation in 1709, and was not renewed; nor does it appear that legal provision for schools of any kind was made for several years. Cornbury was gone, and he transmitted to none of his immediate successors any of his misguided zeal. In 1704, the Society for the Propagation of the Gospel established a school at Rye, and employed as its master, Joseph Cleator. In 1710, the society established Trinity School in New York, and employed William Huddlestone to teach it, who served until 1724, at a salary, first of £10, and afterwards of £15; for which he was required to teach 40 pupils free. This school still continues, and had 72 boys on its foundation in 1875. It appears from a table in Pratt's

Annals of Public Education (1872), that at the close of the colonial period, the society had established, and supported, in whole or in part, 21 schools in 7 counties. The standard studies in all these schools were similar to those in the Dutch schools,—reading, writing, arithmetic, and the catechism of the English Church. In 1732, an act was passed, "to encourage a public school in the city of New York for teaching Latin, Greek, and mathematics." This school was free for 20 pupils, of whom New York City and County were entitled to ten, Albany County to two, and the counties of Dutchess, Kings, Orange, Queens, Richmond, Suffolk, Ulster, and Westchester each to one. The act expired, by a provision contained in it, Dec. 1., 1737; but was extended, by the assembly and council of that year, to Dec. 1., 1838. Hon. B. F. Butler of New York, in an address before the Albany Institute, in 1830, states that the act "was not afterwards renewed; but the school was again continued, and is said to have proved the germ of Columbia College." This is very probable, since the establishment of a college began to be agitated soon after; and an act was passed, in 1746, for raising by lottery £2,250 "for the encouragement of learning and toward the founding of a college." By similar acts, this had increased, in 1751, to £3,443, and trustees were appointed to guard and promote the interests of the embryo institution. The trustees, in 1753, invited the Rev. Samuel Johnson to become the president of the proposed college, at a salary of £250, with the assurance that Trinity Church would make a proper addition thereto. The royal charter establishing King's College, bears date Oct. 31., 1754. Its functions were suspended during the War of Independence, and its building was used for a hospital. Robert R. Livingston, Gouverneur Morris, and John Jay, were among its early graduates; and Alexander Hamilton was one of its students whose studies were interrupted by the opening scenes of the Revolution. From the founding of the college to the close of the colonial period, little was done in behalf of public education. Immediately after the Revolution, the number of the governors of King's College, being so lessened by death and absence as to require the interposition of the legislature, an act was passed in 1784, investing a new corporation, under the title of the Regents of the University of the State of New York, with all the rights, franchises, privileges, etc., vested in the governors of the college by its charter, and changing its name to Columbia College. This act required that all the estate real and personal, held by King's College by virtue of its charter, should be applied solely to the use of Columbia College, and empowered the regents to hold additional estate, for the use of said college, to the amount of an annual income of £3,500; and, "for the further promotion of learning," to hold estates real and personal to the annual amount of 40,000 bushels of wheat; "to found schools and colleges in any part of the state," which colleges properly founded should "be considered as composing a part of the said university." The act of 1784 proving unsatisfactory, another act was passed in 1787, declaring "That an university be and is hereby instituted within this state, to be called and known by the name and style of "The Regents of the University of the State of New York." This act reduced the number of regents, remanded Columbia college and all its estates to a board of trustees, continued the power to hold property to the amount of the annual income of 40,000 bushels of wheat, granted authority to incorporate colleges, continued the power to confer degrees, repealed the provision making such colleges a part of the university, made provision for the incorporation of academies, and placed both academies and colleges under the general supervision of the regents. In this year, and subsequent to the passage of the act, the first two academies were incorporated,—Clinton Academy, at East Hampton, and Erasmus Hall, at Flatbush. The latter is still in existence.—In 1789, the legislature set apart certain portions of the public lands for gospel and school purposes; and, in 1793, the regents, in their report, recommended the establishment of a general system of common schools. In 1795, Governor Clinton, in his message to the legislature, urged the establishment of common schools throughout the state. On the 9th of April, the same year, a law was passed "for the purpose of encouraging and maintaining schools in the several cities and towns in the state, in which the children of the inhabitants of the state shall be instructed in the English language, or be taught English grammar, arithmetic, mathematics, and such other branches of knowledge as are most useful and necessary to complete a good English education;" and the sum of $50,000 a year, for five years, was appropriated for their support. In 1798, the returns showed that 1,352 schools were in operation, with 59,660 pupils. In 1805, the Free School Society, afterwards the Public School Society, in the city of New York, was founded, its first school being opened in 1806. (See New York City.) The first act contemplating a permanent system of common schools was passed in 1812. The following table exhibits, by decades, the progress made, under this and subsequent laws, in the establishing of schools.

Year	Population	Number of school-districts	No. of children of school age	No. of children taught
1815...	1,035,910	2,631	176,449	140,106
1825...	1,614,458	7,642	395,586	402,940
1835...	2,174,517	10,207	538,398	541,401
1845...	2,604,495	11,018	703,399	742,433
1855...	3,466,212	11,798	1,214,113	945,087
1865...	3,831,777	11,780	1,398,757	916,617
1875...	4,705,208	11,291	1,583,064	1,059,238

It will be observed that, for several years, more children were reported in school than were enumerated. This is due to the fact that, until 1851, the legal school age was between 4 and 16 years, after which it was from 4 to 21 until 1864, when it was declared to be from 5 to 21.

II. The acts of 1789 and 1795, as before stated, made provision for the support of schools.

The former set apart two lots in each township of the public land thereafter to be surveyed, for gospel and school purposes. According to the comptroller's report, it appears that, in pursuance of the law, $100,000 was appropriated in 1799 and 1800; but this was never distributed. The act expired in 1800, and an attempt to revive it failed. But though these appropriations were not paid, some effort was made to provide means for the support of the schools. Lotteries were authorized, in 1799 and 1801, to raise money "for the joint benefit of academies and common schools, but chiefly the latter". An act, passed April 8., 1801, "to direct certain moneys to be applied to the use of free schools in the city of New York", directs the school moneys apportioned to NewYork, to be paid to the trustees of the several churches in that city, eleven being enumerated, and each receiving one-eleventh part. The law of 1812 appropriated $50,000 annually, to be distributed among the counties of the state; and authorized the towns to raise by tax a sum equal to their distributive share. The law passed in 1814 made it the duty of the boards of supervisors to levy on each town a sum equal to its distributive share of the money from the state, and made the forfeiture of the school money for the county, the penalty for a neglect or refusal to make such levy. No provision was made by the original act of 1812, for raising any money by district taxation, or by rate-bill to supply deficiencies, because it was believed that the income of the school fund and the tax for the same amount would maintain a school in each district for three months in the year. But the amended act of 1814 required the trustees to cause a school to be kept three months each year, to apply the school moneys to the payment of teachers' wages, and, if there should be a deficiency, to collect it from the patrons of the schools in proportion to the attendance of their children. As the general school law of 1812 did not apply to New York City, a supplementary act was passed March 12., 1813, permitting the city to share in the revenue of the school fund. The city was required to raise a sum equal to its share of such school money, which was "to be apportioned and paid to the trustees of the Free School Society of NewYork, the trustees or treasurer of the Orphan Asylum Society, the Society of the Economical School, the African Free School, and of such incorporated religious societies in said city as now support, or shall hereafter establish, charity schools within the said city." The distribution was to be in proportion to the average number of children taught, between the ages of 4 and 15 years. Nine months' schooling during the previous year was required; and the children were to be taught free of expense. — In 1805, the common-school fund was established by an act providing that the net proceeds of 500,000 acres of the vacant and unappropriated lands of the state which should be first thereafter sold by the surveyor-general should be appropriated as a permanent fund for the support of common schools. This amounted, at the end of that year, to $26,774. The law provided that none of the income should be distributed until it should amount to $50,000 annually; and, accordingly, no distribution was made until 1815. In 1849, the legislature passed an act establishing free schools. The main feature of the act was the abolition of the rate-bill, and the substitution therefor of district taxation. On a submission of this act to popular vote, it was approved by a large majority. The next year, however, it was repealed, but the repeal was not sustained by the vote of the people. The controversy was temporarily settled in 1851, by an act repealing the law, and levying a state tax of $800,000, to be distributed in lieu of the county tax required by the law of 1814; it also restored the rate-bill and extended the school year to six months. In 1856, a tax of three-fourths of a mill on each dollar of the valuation of property in the state was substituted for the $800,000 state tax. In 1867, the rate-bill was finally abolished, and the state tax for the support of common schools was fixed at one and one-quarter mill on each dollar of the assessed valuation of property in the state. The act authorizing the formation of union free-school districts was passed in 1853. In 1864, the school year was extended so as to include 28 weeks, as at present. In 1838, the income of the U. S. deposit fund was by law appropriated as follows: $110,000, for the payment of teachers' salaries; $55,000, for the support of district libraries; $28,000, to the literature fund, to be expended for the education of common-school teachers; and $15,000, to colleges. The balance, which it was estimated would annually amount to about $50,000, was to be applied to the increase of the common-school fund. The constitutional convention of 1846 ordained that $25,000 should annually be set apart from the revenues of the U. S. deposit fund, and become a part of the capital of the school fund. From 1840 to 1846, the amount of the fund derived from this source had increased from $1,932,422 to $2,090,632; but, from 1846 to 1866, it increased to $2,799,630. In 1834, the regents of the university were required by law to apply the surplus income of the literature fund, beyond the sum of $12,000, to the education of common-school teachers, by the distribution of it to such academies as should undertake their instruction. In 1866, a law was passed authorizing the taking of land for school-house sites by right of eminent domain.—The following table exhibits by decades the financial progress of the common-school system.

Year	Valuation of real and personal estate	Capital of common-school fund	School-fund income distributed	Money raised by state and county taxation
1805......	....	$26,774	....	....
1815......	$292,388,827	934,015	$60,000	....
1825......	299,197,721	1,319,886	80,000	$80,000
1835......	527,531,634	1,875,192	100,000	100,000
1845......	605,646,095	2,090,632	110,000	193,503
1855......	1,402,849,304	2,457,521	155,000	800,000
1865......	1,550,879,685	2,765,761	155,000	1,148,423
1875......	2,367,780,102	3,080,108	170,000	2,884,634

III. According to the law of 1795, each town was to elect three or more commissioners to have general charge of the schools, to license teachers, and to apportion the public moneys to the districts, in proportion to the number of days of instruction given in each. The people in each district were to elect trustees, to employ teachers, and to provide for the schools. The act of 1812 also required each town to elect three commissioners of common schools, whose first duty was to form the town into school-districts. They received, and distributed to the districts, the public moneys; and the trustees were required to report to them. Each town was also required to elect from one to six inspectors, who, with the commissioners, had the supervision of the schools, and the examination of teachers. This law also created the office of state superintendent of common schools; and the first annual report was made in 1813. In 1821, the legislature abolished the office, and made the secretary of state, *ex officio*, superintendent of common schools. In 1822, an important amendment to the school law gave the right of appeal to the superintendent on all questions arising under any of its provisions. In 1841, an act was passed creating the office of deputy superintendent, and also that of county superintendent, to whom all appeals were first to be made, his decisions being subject to review by the state superintendent. In 1843, the offices of town commissioner of schools and inspector of schools were abolished, and that of town superintendent created in their stead. The office of county superintendent was abolished in 1847, and appeals were required to be brought directly to the state superintendent; and the returns of the town superintendents were to be made to the county clerks. In 1854, the legislature created a department of public instruction, and placed at its head a superintendent of public instruction, to be elected by joint ballot of the senate and assembly. In 1856, the office of school commissioner was created, that of town superintendent being abolished; and the supervisors of the towns were made the financial agents, to hold and pay out the moneys apportioned by the school commissioners to the towns and districts. The school-commissioner districts were originally, and are now nearly, the same as the assembly districts; but they are not, like the latter, required to be reconstructed after each census.

State Superintendents.—The following is a list of those who have served as superintendents of common schools: Gideon Hawley, from Jan. 14., 1813 until Feb. 22., 1821; William Esleeck, until April 3., 1821, when the office was abolished, its duties being performed by the following persons, holding the office of secretary of state: John Van Ness Yates, from April, 1821 until Feb., 1826; Azariah C. Flagg, until Feb., 1833; John A. Dix, until Feb., 1839; John C. Spencer, until Oct., 1841; when Mr. Spencer being called to take a place in the cabinet at Washington, the position of superintendent was filled by the deputy, Samuel S. Randall, until Feb., 1842; Samuel Young, until Feb., 1845; Nathaniel S. Benton, until Dec. 31., 1847; Christopher Morgan, until Dec. 31., 1851; Henry S. Randall, until Dec. 31., 1853; and Elias W. Leavenworth, until April 8., 1854, when, the office of superintendent of public instruction being created, Victor M. Rice was elected, and served until April, 1857, and was succeeded by the following persons: Henry H. Van Dyck, until April 19., 1861; Emerson W. Keyes (acting), until Feb. 1., 1862; Victor M. Rice (again), until April, 1868; Abram B. Weaver, until April, 1874; and Neil Gilmour, the present incumbent (1876).

IV. In 1830, A. C. Flagg, in his report, suggested the establishment of *district libraries;* and, in 1838, a law was passed, providing for this, and authorizing each district to raise by tax $20 for the first year, and $10 for each succeeding year, for the purchase of books. This was increased, in 1875, to $50 a year. The act of 1838, appropriating the income of the U. S. deposit fund, set apart $55,000 a year for district libraries, and required each county to raise for the same purpose a sum equal to its distributive share thereof. By an amendment passed in 1875, this is reduced to $50,000. The total number of volumes in these libraries was reported in 1845 as 1,203,139; in 1855, as 1,418,100; in 1865, as 1,181,811; and in 1875, as 809,141.—Ample means have been provided for the *education of teachers*. Classes for the instruction of common-school teachers were established by the regents in certain academies, in 1834, in pursuance of the provisions of the act of that year already referred to. The sum now annually appropriated by the regents for these classes is $18,000. In 1844, the first state normal school was established, at Albany, and opened on the 18th of December, in that year. In 1863, the Oswego Training School was taken under the patronage of the state, and, by the acts of 1866 and 1867, was constituted a state normal school. By Chap. 466 of the laws of 1866, normal schools were established, respectively, at Brockport, Cortland, Fredonia, and Potsdam; and, by special acts, in 1867, a normal school was established at Buffalo, and another at Geneseo, the latter under the title of the Wadsworth Normal and Training School.—*Teachers' institutes* have been an important agency for the improvement of common-school teachers. The first teachers' institute in the state was held at Ithaca, Tompkins Co., April 4., 1843; other counties soon followed, and, in 1847, teachers' institutes were recognized by the legislature, an appropriation of $60 to each county being made for their encouragement.—A *compulsory education law* was passed May 11., 1874, entitled "an act to secure to children the benefits of elementary education." This law requires that every child between 8 and 14 years of age shall be instructed in spelling, reading, writing, English grammar, and arithmetic, at least 14 weeks each year, at a day school, or at home, or 28 weeks in an evening school. All persons are prohibited, under a penalty of $50 fine, from employing children of the age mentioned unless it is certified that such instruction was given the previous year. This law was amended in some respects in 1876; but it is to a great extent inoperative.—In 1875, a law was passed providing that "*industrial* or *free-hand drawing* shall be included in the course of study in each of the normal schools; shall be taught in, at least, one department of the schools under the charge of the board of education in each city, in each union free school, and in each free-school district incorporated by special act of the legislature."—The general school law was also amended so that *state certificates* should be granted by the superintendent only on examination, either by himself or by proper persons appointed by him. The first examination under this law was held at Albany, Dec. 16., 1875; nine candidates were examined, and four certificates awarded.

Educational System.—The officers having charge of the common schools are the *superintendent of public instruction*, the *school commissioners*, and the *district trustees*. The superintendent is elected for three years on joint ballot of both branches of the legislature. He has the general supervision of all the schools in the state; apportions the school money, superintends the apportionment by the commissioners, and sees that it is paid by the supervisors and expended by the trustees according to law. He hears and decides all appeals regarding school matters, and his decision is final. He is charged with the control and management of teachers' institutes, and makes rules concerning district libraries. He makes appointment of state pupils to the institutions for the deaf and dumb and the blind, and has the supervision of those institutions. He has the charge of all the Indian schools in the state, and employs agents to superintend them. He is, *ex officio*, a regent of the university, a trustee of the asylum for idiots, and of the Cornell University. He receives and compiles reports from all the school-districts, and makes an annual report to the legislature. The *school commissioners* are elected for the term of three years by the people of their several districts. It is their duty to see that the boundaries of districts are correctly described; to visit and examine the schools; to advise with and counsel the trustees; to look after the condition of the school-houses, and condemn such as are unfit for use; to recommend studies and text-books; to examine and license teachers; to examine charges against teachers, and, on sufficient proof, to annul their certificates; and, when required by the superintendent, to take and report testimony in cases of appeal.

District trustees, one or three in each district, are elected by the inhabitants. The term of office of a sole trustee is one year; of each of a board of three trustees, three years, one being elected annually. The powers and duties of these officers are, to make out tax lists and warrants; to purchase or lease sites, to build or hire school-houses, and to insure and have the custody of all district property; to employ and pay teachers; and to report annually to the school commissioner school statistics and such other information as may be required.—The *school district* is the smallest territorial subdivision of the state. It is formed by the school commissioner, who makes an order defining its boundaries, and files it in the office of the clerk of the town in which the district is situated. He may change the limits of districts by a similar order. A joint district is one that lies partly in two or more counties. Union free-school districts are formed under the law of 1853, authorizing the inhabitants to organize a school in a district comprising more territory and population, and possessing greater powers, than an ordinary district. About 100 districts have been formed by acts of the legislature granting special powers and privileges. The inhabitants, at the annual district meeting, have power to elect a chairman, one or three trustees, a district clerk, a collector, and a librarian; to designate a site for a school-house, to vote taxes to pay for a site, to build and repair school-houses, and to furnish them with fuel and appendages, also to make up deficiencies for teachers' wages. They may also vote taxes, not exceeding $25, for apparatus and text-books, $50 for a library, $25 for contingent expenses, and any sum necessary to insure the district property, and to pay the costs and reasonable expenses of suits at law in which the district may be interested. The librarian serves one year, and has charge of the district library. The collector serves for a year, giving a bond for the faithful discharge of his duty in collecting the moneys due on tax lists, and holding them subject to the order of the trustees. The clerk holds office for one year. It is his duty to keep a record of the district meetings, to attend meetings of trustees, and keep a record of proceedings; to notify persons elected as district officers; to report to the town clerk the names and post-office address of district officers; to give trustees notice of every resignation accepted by the supervisor; and to keep and preserve all records, books, and papers belonging to the office.—The *town clerk* is required to keep in his office all books, maps, papers, and records relating to the schools; to record the certificate of apportionment of school moneys, and to notify trustees of such certificate; to obtain from trustees their annual report; to furnish the commissioner with the names and post-office address of all district officers; to distribute books and blanks to the trustees; to file and record the final accounts of supervisors; to preserve the supervisor's bond; to file and keep the description of district boundaries; and, when called upon, to take part in the formation or alteration of a school-district. The school moneys apportioned to the several towns are paid by the county treasurer to the supervisor, who gives a bond, with two sureties, for double the amount of money set apart to the town, for the safe-keeping, disbursement, and accounting for, of such moneys, and all other school moneys that may come into his hands. The school moneys apportioned to a county, or to a city, are paid by the state treasurer on the warrant of the superintendent of public instruction; and the treasurer's check in payment must be countersigned by the superintendent. All children in the district between the ages of 5 and 21 years, may attend school; and non-residents may also attend it on such terms as the trustees may prescribe. None but a qualified teacher can receive public money, or money raised by tax, in payment of his wages. A qualified teacher is one who holds a state normal school diploma, a certificate from the superintendent, from a school commissioner, or from a city or village officer empowered to grant licenses.—The great majority of the schools in the rural districts employ but a single teacher, and are not graded; but the pupils are generally so arranged in classes as in part to compensate for this. In the larger villages, where most of the "union free schools," and the "free schools" by special acts, are found, the schools are more or less accurately graded, and the system culminates in academical or high-school departments. In the cities, each of which, though under the general law, has special provisions of law applicable to its own schools, the schools are well graded, and generally, with the exception of Brooklyn and New York, have at their head a high school. The system in Brooklyn, finds its culmination in the academical grades of its grammar schools; and, in New York, in the College of the City of New York, connected with which there is an introductory department, which performs the office of a high school, a business or commercial school, and a preparatory school. This department is under the supervision and management of a special principal.

Secondary and superior instruction is under the control and supervision of the *regents of the university* who were originally incorporated May 1., 1784; and were re-organized and reincorporated by the act of April 13., 1787; with power to incorporate colleges and academies; to appoint a president for any college, or a principal for any academy, in case the trustees should leave the office vacant for a year; to hold property to the amount of the annual income of 40,000 bushels of wheat; and to confer such degrees, above that of Master of Arts, as are granted by any college or university in Europe. They were also authorized and required to visit and inspect all academies and colleges established or to be established; to inquire into the system of education and discipline therein, and make an annual report thereof to the legislature; all of which powers and duties still remain. The board as re-organized, consisted of the governor and lieutenant-governor, *ex officio*, and 19 other persons named in the act. In 1842, the secretary of state, and in 1854, the superintendent of public instruction, were made regents, *ex officio*, making the number of the board, as at present constituted, 23. Vacancies, except in case of *ex officio* members, are filled by the legislature; and the term of office, unless forfeited, is for life. The officers of the board are, a chancellor, a vice-chancellor, a secretary, and an assistant secretary. The annual meeting is fixed by statute, and is held in the senate chamber at Albany, on the evening of the second Thursday of January of each year. Other meetings are held at such time and place as the chancellor may appoint. Six members constitute a quorum for the transaction of business. They serve without salary. Other duties have, from time to time, been imposed upon them by law. In 1844, they were made trustees of the state library; and, in the same year, in conjunction with the superintendent of public instruction, were placed in charge of the State Normal School at Albany. In 1845, they were made trustees of the state cabinet, and, in 1856, were charged with what remained of the publication of the colonial history of the state. In 1855, they were authorized to prescribe a course of study for teachers' classes in academies; and have prescribed the following: reading and orthography; writing; arithmetic, intellectual and written; English grammar; and geography. The theory and practice of teaching must be combined with these studies. When any of the above subjects have been thoroughly mastered, one or more of the following may be pursued: algebra, geography, natural history, natural philosophy, history of the United States, science of government, and physiology. In 1853, the regents were required to establish general rules for the incorporation of academies, colleges, and universities, in conformity with existing laws. Academies, colleges, and universities are corporations, under the management of trustees, who usually fill all vacancies occurring in their number. They hold the property, appoint the professors and instructors, and, in the absence of special agreement, dismiss them at pleasure.

While its general excellence is admitted, much dissatisfaction has been expressed with the double feature of this educational system, as shown in the existence of the office of superintendent of public instruction, and of the board of regents; and efforts have been made to give to it a unitary character; but thus far without success. A bill making the regents subordinate to the superintendent and requiring them to report to him, passed both houses of the legislature in 1870, but was vetoed by the governor. Since then, each of the parties in interest has tried, through the aid of the law-making power, to secure for itself the sole supervision of education; and each has expressed, by these acts, the conviction that the welfare of the schools demands a unitary system.

Financial.—The schools derive their support from the following sources: (1) The income of the common-school fund, which, in 1875, amounted to about $180,000. (2) The amount the legislature may annually set apart from the income of the United States deposit fund. This has been for many years $165,000. (3) The state tax of one and one-fourth of a mill on the dollar. (4) District, village, and city taxation. (5) The income from local funds, mainly gospel and school lands.—The mode of distribution is as follows: The superintendent of public instruction, after ascertaining the amount to be apportioned, sets apart, from the income of the United States deposit fund, (1) The amount necessary to pay the salaries of the school commissioners; (2) to each city having a superintendent of common schools, or a clerk of the board of education performing the duty of superintendent, the sum of eight hundred dollars, and in case any city is entitled to more than one member of assembly, five hundred dollars for each additional member, for the support of the common schools of the city; (3) for library moneys, such sums as the legislature shall appropriate. (4) He then sets apart from the *free-school fund*, four thousand dollars for a contingent fund. (5) He then sets apart for the support of Indian schools an equitable sum, the same, in proportion to their numbers, as is apportioned to schools for white children. (6) He ascertains the total so apportioned, and deducts it from the total school moneys appropriated, and divides the remainder into two parts, one equal to one-third thereof, and the other to two-thirds. (7) The one-third of the money is divided by the whole number of qualified teachers in the state, employed for twenty-eight weeks or more during the school year, to ascertain the "district quota;" and is distributed to the districts, one quota for each qualified teacher employed for the required time. (8) He apportions the remaining two-thirds, and also the library money, among the counties according to their population, as shown by the last state or United States census, excluding Indians. In counties where there are cities, separate apportionments are made, one to the city, and one to the rest of the county. (9) He apportions an equitable sum for three separate neighborhoods from the contingent fund. He certifies to the county clerk, county treasurer, and school commissioners, and to city chamberlains or treasurers the amount apportioned to each county and city. The apportionment is payable on the first day of April next after it is made.—The school commissioners having received such certificate, meet at the court-house in their respective counties on the third Tuesday in March, and, apportion the money to the districts. (1) They set apart to each district the "district quotas" allowed by the state superintendent. (2) They set apart any money assigned to districts as equitable allowances. (3) They divide the remainder into two equal parts; one of which they apportion to the districts in proportion to the children of school age residing in each; and the other, to the districts according to the average daily attendance of resident pupils. (4) They apportion the library money according to the number of resident children of school age. They sign their apportionment in duplicate, send one copy to the superintendent of public instruction, and deliver the other to the county treasurer. They also certify to each supervisor the amount apportioned to each district in his town, designating the library money, and that for teachers' wages.

The capital of the *common-school fund* Sept. 30., 1875 amounted to $3,080,107.68, consisting of the following items:

Bonds for lands	$237,488.87
Bonds for loans	150,128.61
Loan of 1840	49,326.00
Bank stocks	50,000.00
Comptroller's bonds	36,000.00
State stock	1,165,057.24
Oswego city bonds	10,400,00
Money in the treasury	1,381,706.96

The income for the year ending Sept. 30., 1875 was $179,303.66. The *free-school fund*, or income derived from 1¼ mill school tax on $2,367,780,102—equalized valuation of the real and personal property in the state, amounted to $2,950,725.13. The capital of the U. S. deposit fund amounted to $4,014,520.71, consisting of the following:

Mortgages for loans, and invested in county bonds	$3,436,407.93
State stocks	315,239.44
U. S. 5 per cent stocks, 1881	50,000.00
Money in the treasury	12,873.34

The revenue from which, in 1875, was $236.000, as follows:

Set apart by statute for common schools	$165,000
For dividends to academies	28,000
For addition to capital of common-school fund	25,000
For teachers' classes in academies	18,000

The state has provided no funds for the support of colleges. For aid to academies, a fund known as the *literature fund*, was derived from the sale of certain tracts of land reserved for literature, and was largely increased by four lotteries, authorized in 1801, to raise $100,000 for the joint benefit of the academies and common schools.

The *capital* of this fund consists of

1. State stocks:—7 per cent	$57,000.00
" " 6 per cent	165.000.00
" " 5 per cent	20,347.00
2. Comptroller's bond payable on demand	25,330.94
3. One hundred shares in the Albany Insurance Company	4,000.00
	$271,677.94

The *income* for the year ending Sept. 30., 1875, was $17,979,49.

School Statistics.—The following are the chief items of statistics of the common schools for the year ending Sept. 30., 1875:

Number of districts			11,291
Number of children of school age, (5—21),	cities,	728,948	
	towns,	854,116	
	Total		1,583,064
Number of children enrolled in the common schools,	cities,	445,552	
	towns.	613,686	
	Total		1,059,238
Average daily attendance,	cities.	226,980	
	towns,	304,855	
	Total		531,835
Number of male teachers,	cities,	612	
	towns.	6,816	
	Total		7,428
Number of female teachers,	cities,	5.724	
	towns,	16.861	
	Total		22,585

Total number of teachers in the state		**30,013**
Number of teachers employed at the same time for 28 weeks or more		**19,073**
Number of volumes in district libraries		**809,141**
Whole number of school-houses		**11,788**
Whole number of pupils taught, in		
Common schools	**1,059,238**	
Normal schools	**6,348**	
Academies	**29,983**	
Colleges	**2,921**	
Private schools	**134,644**	
Law schools	**663**	
Medical schools	**1,472**	
Total		**1,235,269**

The following statistics of Indian schools were reported in 1875:

Number of school-districts		**29**
Number of teachers, whites	**23**	
" " " Indians	**32**	
Total		**55**
Number of children of school age		**1,663**
Number taught during some part of the year		**1,114**
Average daily attendance		**559**
Expenditures for Indian schools		**$9,945.86**

The school moneys for the fiscal year ending Sept. 30., 1876, were from the following sources:

Common-school fund	**$170,000**
U. S. deposit fund	**165,000**
State school tax	**2,712,000**
Total	**$3,047,000**

The apportionment for 1876 was as follows:

For salaries of school commissioners	**$89,600.00**
For supervision in cities	**30,200.00**
For libraries	**50,000.00**
For contingent fund, including $89.01 for separate neighborhoods	**2,583.13**
For Indian schools	**3,370.99**
For district quotas	**957,081.96**
For pupil and average attendance quotas	**1,914,163.92**
Total	**$3,047,000.00**

Aggregate expenditures for school purposes, cities	**$6,292,737.30**
towns	**5,166,616.13**
Total	**$11,459,353.43**

Normal Instruction.—The state normal school at Albany is under the joint supervision and management of the superintendent of public instruction and the regents of the university, who arrange the studies, fix the number and compensation of teachers, prescribe the conditions on which pupils shall be received from each county, giving to each its proportion according to population. They appoint an executive committee of five persons, one of whom is the superintendent, who is also the chairman for the management of the school under the prescribed regulations. The supervision and control of the other normal schools are exercised by the superintendent of public instruction, who appoints local boards for their management. The following is a statement of the general statistics of the normal schools for 1875:

Number of normal schools, state	**8**	
" " " " city (N. Y. Normal College)	**1**	
Total		**9**
Number of teachers in state normal schools		**112**
No. of pupils, including those in training depts.		**6,348**
No. of students, in normal departments	**2,955**	
in N.Y. Normal College	**1,310**	
Total		**4,265**
No. of graduates, state normal schools	**256**	
N. Y. Normal College	**168**	
Total		**424**
Cost of state normal schools		**$163,892.03**
" " " N. Y. Normal College		**88,873.23**

The state normal school at Albany, in 1875, had an attendance of 433 students, representing fifty counties of the state; the number of graduates was, the first term, 27; the second term, 46; total, 73, of whom 23 were males, and 50 females. A school of about 100 pupils, principally from the city of Albany, furnishes a means of practice in teaching to the students of the normal school. The number of instructors in the normal school was 14.—The normal school at Brockport had an enrollment of 886: normal department, 325; academic department, 221; intermediate and primary departments, 340. The average attendance was 469, of whom 170 belonged to the normal department. The number of graduates was 14.—In the normal school at Buffalo, the average attendance was 180, out of an enrollment of 314; academic students, 16. The number of graduates was 75.—In the normal school at Cortland, the enrollment was 807,—in the normal department, 370; training school, 437. The average attendance was, respectively, 179 and 328.—In the normal school at Fredonia, the enrollment was 805,—in the normal department, 230; academic, 185; senior, 116; junior and primary, 274; the average attendance was, respectively, 147, 189, 103, and 188; total, 627.—In the normal school at Geneseo, the enrollment was 902,—in the normal department, 347; academic, intermediate, and primary, 555. The number of graduates was 24. The normal and training school at Oswego had 13 instructors; an enrollment of 460 pupils, and 59 graduates,—6 males and 53 females.—In the normal school at Potsdam, the enrollment was 776,—normal department, 362; academic, 163; primary and intermediate, 251. The average attendance was, respectively, 183, 38, and 149. The number of instructors was 15. In the Normal College of the city of New York, the number of students on register was 1,310, exclusive of the training school; and the average attendance was 1,071. The number of pupils enrolled in the training department was 803; average attendance, 761. The number of instructors in the normal college was 34; in the training school, 18.—*Teachers' institutes* are held for one or two weeks (in the majority of the counties, for two weeks), under the instruction of persons employed by the state superintendent. The following statistics of institutes are reported for 1875:—

Number of counties in which institutes were held		**58**
Number of institutes		**58**
No. of teachers in atttendance, males	**3,638**	
females	**7,295**	
Total		**10,933**
Average number from each county		**188**
Average expense per county		**$279.44**

In 1875, the number of academies which maintained teachers' classes was 95, at which the attendance was 619 males and 1,275 females.

Denominational and Parochial Schools.—The convention journals of the various dioceses of the Protestant Episcopal Church, for 1875, excepting the dioceses of New York and Central New York, state the number of schools, church and parochial, as 16, with 804 pupils; Sadlier's *Catholic Directory* for 1876, gives *data* from which are derived the following: the number of schools, select and parochial, was 292; the number of pupils, 94,430.

Secondary Instruction.—The whole number of academies in the state reporting to regents is 222, of which more than one-half are connected with, and form a part of, the free-school systems of their respective localities. This number increases annually, under a law of 1864, which authorizes the trustees of any academy, by a majority vote, to surrender their property to the board of education of any union free-school district in the same place, and thus pass out of existence as a corporation. The academies still exercising their corporate rights depend mainly upon tuition fees for their support. In 1870, examinations were instituted by the regents to test the attainments and determine the classification of academic pupils. Printed lists of questions are furnished on English grammar, geography, and arithmetic, and a list of 100 words to be spelled. Certificates are issued to those who pass the examination successfully.

The following items of statistics are for the year 1875:

Number of academies and schools reporting..		222
Number of teachers employed...............		1,151
Whole number of scholars..................		31,463
Average attendance by terms...............		20,742
Number of academic scholars...............		8,012
Average age of scholars...................		17.3 yrs.
Receipts, from tuition..............	$431,660	
other sources.......	754,925	
Total.............		$1,186,585
Expenditures, for salaries..........	$788,245	
other purposes....	372,599	
Total.............		$1,160,844
Value of academic property..............		$6,492,050

At the regents' examination in 1873—4, the number of candidates examined was as follows:

In arithmetic,	18,856;	passed,	3,947
" geography,	17,376;	"	8,649
" grammar,	17,330;	"	7,300
" spelling,	17,182;	"	8,830

Of private institutions for secondary instruction, 38 for boys, 47 for girls, and 121 for both, reported to the U. S. Bureau of Education, in 1874, a total of 1,400 teachers, with 25,620 pupils; of whom 14,721 were represented as pursuing English studies, 3,131, classical studies, and 3,791, scientific studies. There are also many preparatory schools, included in which may be mentioned the introductory department of the College of the City of New York. These schools contain, in the aggregate, upward of 6,000 pupils. Business colleges are also numerous, 15 making return, in 1875, to the U. S. Bureau, of 72 teachers and 2,919 pupils. Besides these institutions, several of the cities—Albany, Buffalo, Oswego, Rochester, Syracuse, Troy, Utica, etc,—support free academies or high schools.

Superior Instruction.—The following is a list of the principal colleges and universities.

[Those exclusively for the higher education of women are printed in *italics*; those in SMALL CAPS admit both sexes.]

NAME	Location	Date of Charter	Denomination
ALFRED UNIVERSITY	Alfred Centre..	1857	S. D. B.
Brooklyn Collegiate and Polyt. Inst...	Brooklyn.......	1854	Non-sect.
Canisius Coll.......	Buffalo.........	1870	R. C.
Coll. of City of N. Y.	New York......	1866	Non-sect.
Coll. of St. Fr. Xavier.	New York......	1861	R. C.
Columbia College...	New York......	1754	Non-sect.
CORNELL UNIVERSITY	Ithaca..........	1865	Non-sect.
Elmira Female College	Elmira.........	1855	Presb.
Hamilton College...	Clinton.........	1812	Presb.
Hobart College.....	Geneva.........	1824	P. Epis.
Ingham University..	Le Roy.........	1857	Presb.
Madison University.	Hamilton	1846	Bap.
Manhattan College..	New York......	1863	R. C.
St. Bonaventure Coll.	Allegany	1875	R. C.
St. John's College..	Fordham.......	1846	R. C.
St. Joseph's Coll...	Buffalo.........	1861	R. C.
ST. LAWRENCE UNIV.	Canton.........	1856	Univ.
St. Stephen's Coll.	Anandale.......	1860	P. Epis.
SYRACUSE UNIV.....	Syracuse	1870	M. Epis.
Union University } Union College }	Albany and } Schenectady }	1795	Non-sect.
Univ. of N. Y. City.	New York......	1831	Non-sect.
Univ. of Rochester.	Rochester	1846	Bap.
Vassar College......	Po'keepsie	1861	Non-sect.
Wells College........	Aurora..........	1870	Non-sect.

For further information in regard to these institutions, see their respective titles.

Scientific and Professional Instruction.—Under this head, are included 7 schools of science, having, in the aggregate, 84 instructors and 2,311 students; 14 medical schools, with 199 instructors, and 2,206 students; 4 schools of law, with 15 instructors and 589 students; and 12 theological schools, with 68 intructors and 652 students. The following tables contain lists of these several institutions:

MEDICAL SCHOOLS.

NAME	Location	When founded	No. of instructors	No. of students
College of Phys. & Surg. of City of New York..	New York	1807	24	387
College of Pharmacy of City of New York....	New York	1831	5	200
Medical Dept. of University of City of N. Y...	New York	1837	21	396
Albany Medical College of Union University..	Albany	1839	19	123
Medical Dept. of the University of Buffalo....	Buffalo	1846	9	103
Long Island College Hospital................	Brooklyn	1858	22	117
Homœopathic Med. Coll. of the State of N. Y...	New York	1860	19	107
Bellevue Hospital Medical College..........	New York	1861	19	506
New York Med. Coll. and Hospital for Women..	New York	1863	15	22
New York College of Dentistry...........	New York	1865	8	52
Eclectic Medical College	New York	1865	10	80
New York Free Med. Coll. for Women.....	New York	1871	13	47
New York College of Anæsthesia..........	New York	1873	......	......
College of Physicians & Surg., Syracuse Univ.	Syracuse	1870	15	66

SCHOOLS OF SCIENCE.

NAME	Location	When founded	No. of instructors	No. of students
College of Agriculture and Mechanic Arts, Cornell University...	Ithaca	1865	18	206
Dept. of Science, Univ. of City of New York.	New York	1831	2	15
Engineering School, Union College..........	Schenectady	1795	2	33
Rensselaer Polytechnic Institute......	Troy	1826	12	181
School of Mines, Columbia College..........	New York	1864	16	162
Schools of Science and Art, Cooper Institute	New York	1859	25	1,436
U. S. Military Academy.	West Point	1802	9	278

LAW SCHOOLS.

NAME	Location	When founded	No. of instructors	No. of students
Albany Law School, Union University.......	Albany	1851	5	109
Columbia College, Law School...............	New York	1858	4	438
Department of Law, University, City of N. Y.	New York	1831	5	32
Law School of Hamilton College...............	Clinton	......	1	10

THEOLOGICAL SCHOOLS.

NAME	Location	When founded	Religious denomination
Delancey Divinity School	Geneva	......	P. Epis.
General Theol. Sem. of Prot. Episcopal Church	New York	1817	P. Epis.
Hamilton Theol. Sem., Madison University...	Hamilton	1820	Bap.
Hartwick Seminary.....	Hartwick	1816	Luth.
Theological Dept., Martin Luther College....	Buffalo	1853	Ger.Luth.
Newburgh Theological Seminary............	Newburgh	1836	Ass.R. Pr.
Rochester Theological Seminary.............	Rochester	1850	Bap.
St. Joseph's Provincial Seminary.............	Troy	1864	R. C.
Seminary of our Lady of Angels................	Susp. Bridge	1863	R. C.
Auburn Theological Seminary.................	Auburn	1820	Presb.
Theological Dept., St. Lawrence University..	Canton	1858	Univ.
Union Theological Seminary..................	New York	1836	Presb.

The New York Nautical School, under the managment of the board of education of the city of New York, was established for the purpose of educating seamen for the mercantile marine, and occupies, in conformity with an act of Congress, passed June 2., 1874, the U. S. ship St. Mary's in N. Y. harbor. In 1875, the whole number taught was 185; the average attendance, 97. This institution is in a flourishing condition. The first class, consisting of 60 pupils. graduated in November. 1876.

Special Instruction.—There are 4 institutions for the education of deaf-mutes: (1) The N. Y. Institution for the Instruction of Deaf and Dumb, in the city of New York, incorporated in 1817, and opened in 1818; (2) The N. Y. Institution for the Improved Instruction of Deaf-Mutes, in New York, established in 1870; (3) the Couteulx St. Mary's Institution for the Improved Instruction of Deaf-Mutes, in Buffalo, recognized by the state in 1872; and (4) the Central New York Institution for Deaf-Mutes, in Rome, incorporated and organized in 1875.

Any parent having a deaf and dumb child above the age of twelve years, though able to support him at home, being without sufficient means to pay for his support at a proper institution where he may be instructed, may present to the superintendent of public instruction a certificate from the superintendent of the poor, stating his inability to pay, and thereupon it becomes the duty of the superintendent to give to said child an appointment, for five years, to one of the above named institutions. The overseer of the poor of the town, if any deaf-mute child, over six and under twelve years of age, is liable to become a county charge, or becomes such, may send such deaf-mute child to "any institution in this state for the education of deaf-mutes". (*Laws of* 1875.) A boarding-school for female deaf-mutes is connected with St. Joseph's Academy, located at Fordham, and under the control of the Roman Catholic Church. The following statistics in relation to the instruction of deaf-mutes are reported for 1875:

No. of pupils supported	by the state		356
" " "	by counties in the state		162
" " "	by New Jersey		47
" " "	by parents or guardians		19
" " "	by the Frizzel fund		1
Whole number of pupils,	males	337	
	females	247	
	Total		584

The institutions for the education of the blind are the following: (1) The New York Institution, in the city of New York, incorporated in 1831, which, in 1875, had 8 instructors, and 173 pupils; (2) The New York State Institution, located at Batavia, incorporated in 1867, and receiving its support from legislative appropriations. In 1875, the number of instructors was 10; of pupils, 166.—The New York Asylum for Idiots was first established at Albany in 1848, by H. B. Wilbur as a private institution. It was adopted by the state, and continued at Albany, for a few years, and removed to Syracuse, in 1854. The building was erected by the state, in 1853—4, at a cost of $70,000, on a site donated by residents of Syracuse. This institution has deservedly attained an excellent reputation, as among the best of its kind.—The number of pupils, in 1875, was 207; average attendance for the year, 183.

Educational Associations.—The first teachers' association in the state, as far as can be ascertained, was The Teachers' Association for Mutual Improvement, of the town of Charlton. Its first meeting was held Jan. 5., 1836; and it continued until 1839. In July, 1836, J. Orville Taylor issued a call, in the *Common School Assistant,* for a convention of the "common-school teachers of the state" to be held at Albany; and the meeting, Sept. 20., 1836, resulted in the formation of the State Teachers' Society. This association held a meeting Feb. 18., 1837, and a convention at Utica on the 11th of May following; but, for some unexplained reason, no subsequent meeting was held. The next movement to form an association of the teachers of the state was made in March, 1845, at a meeting of the Albany County Teachers' Association. A call for a convention was issued; and a meeting, July 30. and 31., 1845, at Syracuse, resulted, attended by more than 150 teachers. This association has held an annual convention each year since that time, except in 1849. The addresses, reports, resolutions, and discussions have taken a wide range, covering the entire field of public education, and have exerted a powerful influence both in the school room and in legislative halls. Other associations have sprung up in all parts of the state. The principals of the normal schools have an association which holds an annual meeting. The State Association of School Commissioners and City Superintendents, organized in 1856, also holds an annual meeting. The superintendent of public instruction is, *ex officio*, its president. The *University Convocation*, organized in 1863, is an association composed of the members of the board of regents, of all teachers in colleges, normal schools, and academies that are subject to the visitation of the regents, of the trustees of such institutions, and of the president and other officers of the State Teachers' Association. The chancellor is the permanent president, and the secretary of the board of regents is the permanent secretary. The convocation meets annually at Albany.

School Journals.—The following are the principal school journals which have been published in the state: *The Common School Assistant* (monthly), published at Albany, in 1836, by J. Orville Taylor, discontinued in 1839; *The District School Journal* (monthly), commenced at Geneva, in 1840, by Francis Dwight, removed, in 1841, to Albany, discontinued in 1852; *The Teachers' Advocate* (weekly), first published at Syracuse, in 1845, by L. W. Hall, in 1847, united with the *American Journal of Education* (monthly), commenced, in 1846, in New York, edited by Joseph McKeen, afterwards county superintendent of schools, and (1854—6) assistant city superintendent in New York; this journal was merged in *The Teachers' Advocate*, united with which was, subsequently, *The District School Journal*, and published in New York till 1851; *The Monthly Educator*, published at Rochester, 1847—8; *The Free School Clarion* (monthly), published at Syracuse, 1849—50; *The New York Teacher* (monthly) commenced in Albany, in 1852, under the auspices of the New York State Teachers' Association, assumed, in 1856, by James Cruikshank; united, in 1867, with *The American Educational Monthly*, which was established, in 1864, in New York, by J. W. Schermerhorn; *The American Journal of Education and College Review* (monthly), edited by Absalom Peters, D. D., and S. S. Randall, published in New York, 1855—7; *The New York School Journal* (semi-monthly), established in New York, 1869; *The Journal of Education*, first published in Brooklyn, in 1875, afterwards in New York, until 1876; *The New York State Educational Journal* (monthly), commenced at Fredonia, in 1872, united, in 1875, with *The School Bulletin*, established in 1874, at Syracuse; and *The National Teachers' Monthly*, commenced at New York, in 1875.

For further information in regard to the history of education in this state, see A. Russell, *An Account of New York Schools* (1847); S. S. Randall, *History of the Common-School System of the State of New York* (1871); *Report on Education in the City of New York*, issued by order of the Board of Education (1869); Bourne, *History of the Public School Society* (1870); Dunshee, *History of the School of the Reformed Prot. Dutch Church* (1853); D. J. Pratt, *Annals of Public Education in the State of N.Y., from* 1626 *to* 1746 (1872); V. M. Rice, *Special Report on the Present State of Education in the United States and other countries* (1867).

NEW YORK (City), the metropolis of the state of New York, the chief emporium of the United States, and the most populous city of the western continent. Its population, according to the state census of 1875, was 1,046,037.—The history of education in this city commences almost with its first settlement by the Dutch, who, in their own country, had already realized the importance of popular education. "Neither the perils of war," says Brodhead, "nor the busy pursuit of gain, nor the excitement of political strife, ever caused them to neglect the duty of educating their offspring. Schools were every-where provided, at the public expense, with good school-masters to instruct the children of all classes in the usual branches of education; and the consistories of the churches took zealous care to have their youth thoroughly taught the catechism and the articles of religion." The offices of minister and schoolmaster were at first united, and the school was under the control of the established church. In 1633, these offices were separated; but it was several years before a school-house was built. At the end of Stuyvesant's administration, there were, in New Amsterdam, 3 public schools, a dozen or more private schools, and a Latin school of great repute. The first public school established in New Amsterdam by the Dutch has continued to the present time, under the title of the School of the Reformed Protestant Dutch Church. After the conquest of New Netherlands by the English, in 1664, the schools of New Amsterdam, or New York, were still continued, though without governmental aid. In 1702, an act was passed by the colonial legislature for the "encouragement of a Grammar Free School in the City of New York;" but it does not appear that the school was immediately established. This act expired by limitation in 1709; and, for a period of twenty years thereafter, no effort seems to have been made to revive it, nor any measures taken in behalf of primary education during the subsequent history of the colony. King's (now Columbia) College was established in 1754. During the Revolutionary war, the schools of the city were closed; and, for several years after the termination of the war and the establishment of the federal government, no measures were taken to provide schools for the people, except by benevolent societies. The Manumission Society opened a school in 1778, for the instruction of colored children. Other schools were afterward established by this society, which continued to exist till 1834, when its schools were transferred to the Public School Society, which had, at that time, the entire control of the common schools of the city. This society was founded in 1805, under the title of "The Society for Establishing Free Schools in the City of New York, for the Education of such poor Children as do not belong to, or are not provided for, by any Religious Society." De Witt Clinton was elected the first president of the society. The first school was opened by the society May 17., 1806. In 1808, the name of the society was changed to the Free-School Society of New York. In 1815, it received $3,708.14 from the school fund, the quota of the city under the first apportionment of the fund. Then the whole number of pupils, under its care was 933, taught in 3 schools. These schools were organized under the Lancasterian or monitorial system, and so continued to a considerable extent up to the time of the dissolution of the society. In 1826, the society received a new charter, under which its name was changed to The Public School Society. Any citizen could become a member of this society by the payment of $10; and the trustees were annually elected by the members. The members of the city corporation were members, *ex officio*, of the society; and the mayor and recorder, of the board of trustees. In 1831, the legislature authorized, for the support of the schools, the levying of a tax of one-twentieth of one per cent of the assessed valuation of the city property. The commissioners of the common-school fund, consisting of one person from each ward of the city, appointed by the common council, received and distributed the school moneys of the city and the state; and it was their duty to visit every school twice in each year. In addition to these means of support, considerable donations of money and land had been made to the society from the commencement of its beneficent career. In 1840, the trustees of the Catholic Free Schools applied to the common council to be permitted to participate in the school moneys, and, in that application, took occasion to find considerable fault with the internal management of the schools, and the text-books used, which they denounced as practically sectarian, and referred to the Society as a "gigantic and growing monopoly", to which it was unwise to intrust, to so large an extent, the interests of public instruction. An exciting discussion ensued, first, in the common council, afterwards, in the legislature; and, in 1842, on the recommendation of the governor, William H. Seward, an act was passed authorizing the election of school commissioners who were to constitute a board of education for the city, and local school inspectors and trustees in each ward; but still allowing the Public School Society and other corporations to continue their schools, and participate in the school moneys, prohibiting, however, such participation in the case of every school in which "any religious sectarian doctrine or tenet should be taught, inculcated, or practiced." Important amendments were made to this law in 1844, and again in 1851, at which latter date, the system was more fully organized; and the board of education was empowered to appoint a city superintendent of schools, and assistant superintendents, in place of the county superintendent appointed by the board of supervisors in pursuance of the state law passed in 1841. Under this new and popular system, additional schools were rapidly established, and upon a more liberal basis, the old monitorial system being either greatly restricted or abandoned entirely, the buildings being constructed with a greater number of class rooms, and a much larger number of teachers being employed. The two systems continued to exist side by side; but there was very great rivalry, and the popular and liberal features of the ward schools, as they were called, gave them a great advantage over those of the Public School Society. The latter suffered from financial embarrassment, its annual deficiencies becoming larger every year, and new legal difficulties being constantly developed in its obtaining monetary relief. Its character as a private corporation was necessarily a constant obstacle to this. The only remedy was to merge the systems, and transfer the property of the society to the city. With singular magnanimity, the society agreed to do this; and, in 1853, an act was passed by the legislature consummating the union. No body of men, in the annals of mankind, can justly claim greater credit for sincere philanthropy and noble public spirit, than the Public School Society. They had administered the school affairs of the city with the utmost integrity and fidelity; and, at the close, they voluntarily surrendered to the municipality, as their contribution to the cause of common-school education, property amounting to no less than $600,000.—Previous to this event, in 1847, an act had been passed authorizing the establishment of the Free Academy, for boys, in case the act should be approved by a majority of the legal voters of the city. Such approval having been given, by a very large majority (19,400 against 3,400), the institution was organized in 1848, under Horace Webster, as the first president. In 1868, this institution, by a special act of the legislature, became the College of the City of New York.—In 1870, the Female Normal College was organized; previous to which time, there was no normal school in the city except a Saturday school for teachers. There is, at present, no provision for the instruction of male teachers, except through the College of the City of New York.—Many changes have taken place in the organization of the system in New York since 1853. Then the board of education consisted of two school commissioners from each ward, one-half elected annually; and there were also elected in each ward eight trustees, and two school inspectors; the twelve, including commissioners, trustees, and inspectors, constituting a ward board of school officers. This continued until 1864, when an act was passed dividing the city into seven school-districts, for each of which three commissioners of schools were elected for a term of office of three years, one-third retiring each year. Five trustees were elected in each ward; and three inspectors were, on the nomination of the mayor, appointed by the board of education for each district. In 1869, the system was again changed, the board of education being composed of twelve commissioners appointed from the city at large by the mayor. In 1871, the educational system was made a department of the city government, all the officers—commissioners, inspectors, and trustees being appointed by the mayor. In 1873, the law was passed under which the schools are now (1876) conducted.

County and City Superintendents.—The first superintendent of schools in the city of New York was William L. Stone, appointed in pursuance of the state law passed May 26., 1841, creating the office of county superintendent to be appointed by the board of supervisors in each county. Col. Stone served until his death, in 1844, when he was succeeded by David M. Reese, till 1847; William A. Walker, till 1848; Joseph McKeen, till 1853, as county and city superintendent, the latter from 1851; S. S. Randall, till 1870; Henry Kiddle, from 1870 until the present time,—elected for the fourth time in 1876. Mr. Kiddle had previously served as first assistant superintendent from 1856 to 1870.

School System.—The *board of education* consists of twenty-one members appointed from the city at large by the mayor; each ward board consists of five trustees appointed by the board of education; and three inspectors are appointed by the mayor for each of the eight school-districts into which the city is divided, one consisting of the district annexed to the city in 1874. The board of education has the general control of the system, making all rules and regulations for the schools, and for the *trustees*, whose duty it is to have the care and safe-keeping of the school property, to manage the schools, and appoint the teachers, except principals and vice-principals, who are appointed by the board of education on the nomination of the trustees, or, after such nomination is made, in disregard of it, if they so please. The *inspectors* supervise the schools, audit bills incurred by the local officers, and have concurrent authority with the city superintendent in granting teachers' licenses.—The *city superintendent* is elected by the board of education for a term of office of two years; and it is his duty, under such rules as the board may establish, to visit and examine schools, and report the result to the board with such recommendations as he may deem proper; with the concurrence of two inspectors to grant licenses to persons proposed as teachers; and to report annually, or oftener if required, to the state superintendent. He may also revoke licenses, with the concurrence of two of the inspectors of the district in which the teacher is employed; but the teacher has a right of appeal to the state superintendent. There are also seven assistant superintendents, elected in the same manner and for the same term as the city superintendent, whose duties are to examine schools and assist in the examination of teachers, under the direction of the city superintendent.—The schools are supported from the general tax levied on the real and personal property of the city for the support of the city government, etc. The city, it is true, receives from the state its distributive portion of the state school moneys (see NEW YORK); but its contribution to the state for school purposes is greatly in excess of all that it receives in return, the difference, in 1875, amounting to $827,253.87.—Teachers' certificates are conferred, after examination, by the city superintendent, but must also be signed by at least two school inspectors, certifying that they were present at the examination and that they concur in granting the same. These certificates are, at first, provisional, and attest only the scholarship and moral character of the holders; and no permanent certificate, attesting the ability to teach, can be conferred until at least six months' experience has been had in the public schools of the city. No person is permitted to perform service in any position as a teacher until duly licensed, and no certificate is valid after a discontinuance of service of two years. Candidates for provisional licenses, or certificates, must be examined in reading, spelling, English grammar, history of the United States, English literature, arithmetic, algebra (through quadratics), plane geometry, descriptive astronomy, physics, zoölogy or physiology; and the principles and methods of teaching. In order to obtain a permanent certificate for any position or grade, the candidate's practical efficiency must be attested, and he must be able to pass an examination in the particular subjects required to be taught in the grade, as well as in the methods of teaching the same.—The schools are divided into grammar and primary schools. Some of the school buildings contain three schools— a male grammar school, a female grammar school, and a primary school or department (mixed); others contain two schools—a grammar school, male or female, and a primary school, male, female, or mixed; others contain only one school, which is a primary school (mixed). Each school, or department, is under a separate principal, the other grades of teachers being vice-principals and assistants.—There are also evening schools, including an evening high school, and corporate schools, the latter being under the charge of their own trustees, although participating in the apportionment of the state school fund. These schools include those of the orphan asylums, the Juvenile Asylum and House of Refuge (reformatories), the schools of the Childrens' Aid Society, the Female Guardian Society, etc.—The *salaries* paid to teachers are as follows; to *principals* of male grammar schools—*maximum*, $3,000; *minimum*, $2,250; of female grammar schools—*max.*, $2,006; *min.*, $1,200; of primary schools—*max.*, $1,800; *min.*, $1,000; to *vice-principals* of male grammar schools—*max.*, $2,500; *min.*, $2,000; of female grammar schools—*max.*, $1,298; *min.*, $1,200; of primary schools—*max.*, $1,200; *min.*, $900; to male *assistants*, an average not exceeding $1,652; to female assistants in male grammar schools, an average of $850, in female grammar schools, an average of $767; in primary schools, an average of $600. The *minimum* of salary payable to any teacher is $500.—The *school age* is from 4 to 21 years; and "parents, guardians, or other persons having the care or custody of children," residing in the city, are entitled to send such children to any of the public schools.—The *course of study* of the grammar and primary schools embraces reading, spelling, English grammar, geography, arithmetic, the history of the United States, astronomy, algebra, book-keeping, penmanship, drawing, and vocal music. German or French may be taught in the three higher grades of the grammar-school course, whenever the parents or guardians of at least thirty pupils desire it. Pupils to be promoted to the grammar schools, must be able to read in a Third Reader, to cipher as far as long division (with divisors not exceeding 25), have learned the elements of geography, and have made some progress in penmanship and drawing. Sewing may be taught in the grammar schools for girls. The amount of time to be given to each study is carefully fixed by the rules of the board of education.

The whole number of schools under the care of the board of education is 308, as follows: 46 grammar schools for males; 46, for females; 13, for, both sexes (mixed schools); 66 primary departments (in the same buildings with grammar schools); 45 separate primary schools; 7 colored schools; 46 corporate schools; 35 evening schools; besides the Normal College, the Saturday Normal School, for teachers, the Training School, and the N. Y. Nautical School. The following table presents the *school statistics* for 1875:

Grade of schools.	No. of schools	No. of teachers	No. of pupils enrolled	Average attendance
Normal College......	1	34	2,031	1,071
Training School......	1	18	803	517
Saturday Normal School............	1	9	560	393
Grammar Schools....	105	1,112	46,813	36,572
Primary Departments and Schools........	111	1,388	109,003	62,418
Colored Schools......	7	37	1,482	872
Nautical School......	1	3	185	97
Total in day schools..	227	2,601	160,877	101,940
Evening Schools......	35	408	24,149	10,343
Total in public schools	262	3,009	185,026	112,283
Corporate Schools....	46	195	22,812	9,092
Grand total..........	308	3,204	207,838	121,375

Receipts (for 1875—6):		
Apportioned to the city by the state superintendent	$ 584,654.58	
Raised by local tax.......	2,964,486.98	
Total..........		$3,549,141.56
Payments:		
For teachers' salaries.....	$2,439,696.36	
" buildings, sites, repairs, etc...........	390,296.22	
" school apparatus, books, etc..........	144,273.29	
Colored schools...........	39,503.82	
Corporate "	103,126.05	
Other expenses...........	432,245.82	
Total..........		$3,549,141.56

Private, Parochial, and Denominational Schools.—No complete and reliable statistics in relation to private schools in the city have been collected since 1867, in which year there were 23 Roman Catholic free schools, having 16,342 pupils; 24 R. C. pay schools, with 6,070 pupils; 24 schools of the Protestant Episcopal Church, with 2,367 pupils; 22 schools connected with other Protestant denominations, with 5,713 pupils; 12 Hebrew schools, with 998 pupils; 25 German schools, free and private, with 3,641 pupils; and 168 other private schools, with 11,875 pupils; making, in all, 298 schools, with 47,006 pupils. This class of schools has considerably increased in number and attendance since that time. At the close of 1875, the Catholic parochial schools numbered 57, with an enrollment of 30,732 pupils,—13,062 boys and 17,670 girls, taught by about 380 religious and lay teachers. Besides these, there were 18 select schools belonging to this denomination, which gave instruction to about 1,500 pupils. For information in regard to the educational institutions of a higher grade, see New York (*State*).

NEW YORK, College of the City of, is the only free college as yet established by any city of the United States which is supported wholly by annual taxation. It was originally organized as the New York Free Academy, in the year 1848, the subject having been first submitted to a vote of the citizens, who approved it by an overwhelming majority. In the year 1866, by act of the legislature, it was "erected into the College of the City of New York," but the course of study remained unchanged. It is a part of the common-school system of the city, and is governed by a board of trustees, composed of the members of the board of education and the president of the college. The law also establishes an executive committee of nine trustees, including the president, for the "care, management, and government of the college." An annual appropriation of $150,000 is made for its support. Every thing is free,—tuition, books, and stationery. The expenses for commencement exercises and junior class exhibitions are paid by the board, and an annual appropriation of $200 is made to each of the two literary societies of the college. Its students are drawn from the common schools. The candidates for admission must have attended one year at a common school in the city, and must be 14 years of age. The subjects in which they are examined in June of each year are those taught in the grammar schools. The college curriculum extends through 5 years, and comprises two full courses of study, the ancient, and the scientific. The former has for its main feature the study of Latin and Greek; the latter, that of French and German. The calculus and mixed mathematics are taught only in the scientific course. There is a partial course for introductory or first-year students, finished in one year, and known as the commercial course. The students are arranged in five classes, introductory, freshman, sophomore, junior, and senior. In the collegiate year, 1876–7, there were in the introductory class, 512; freshman, 163, sophomore, 80; junior, 57; senior, 50; total, 862. Of these, there were in the ancient course 318; in the scientific course, 276; in the commercial course, 238. As there is no requirement in ancient or modern languages for admission, these are begun in the college. There are 14 professors, who with the president form the faculty. In addition to these, there are 18 tutors, total number of instructors, 32. The subjects taught are Latin, Greek, French, German, Spanish, English, history, mathematics, mechanics, chemistry, natural history, philosophy, political economy, and drawing; and, in the commercial course, phonography, book-keeping, and penmanship. Two degrees are conferred, Bachelor of Arts and Bachelor of Science. There is also a post-graduate course in engineering. In [illegible] this had no students; in the present year [illegible], there are 3. The library contains [illegible] volumes, and its support is derived from the interest on two bequests, the [illegible] of $8,000 and the [illegible] of $5,000. The apparatus of all kinds [illegible] the provision of chemical, physical [illegible]

[illegible]

NEW YORK [illegible]

[illegible]

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NEW ZEALAND. See AUSTRALIA.

NIEMEYER, August Hermann, a German educator and author, born Sept. 1, 17[illegible], died July 7, 1828. In 1779, he was appointed extraordinary, and, in 1784, ordinary professor of theology in the university of Halle, holding at the same time the position of inspector of the theological seminary. He was a great-grandson of A. H. Francke (q.v.), and gained great celebrity as one of the directors of the institutions of Francke, to which position he was appointed in 1785; and when, in 1787, a teachers' seminary was added to these institutions, Niemeyer was placed at the head of it. In 1807, owing to his exertions, the university which had been closed by Napoleon, was re-opened by King Jerome; and Niemeyer was appointed chancellor and *rector perpetuus*. In this office, he was confirmed by the king of Prussia, and held it with great success for nine years. Niemeyer is the author of an important work on the principles of education and instruction (*Grundsätze der* [illegible] *des Unterrichts*, 1799), in which for the first time German pedagogy was brought into a system, and which contained one of the earliest attempts at a history of education. As the first principle of education, Niemeyer regards the harmonious development of the faculties with which we are endowed. His *Grundsätze* [illegible] gradually grew from [illegible] to three volumes, and he himself edited [illegible] of the work.

NORMAL COLLEGE. See NEW YORK [illegible]

NORMAL SCHOOL, the name given in [illegible] States and some other countries [illegible] and training of teachers [illegible] the French term [illegible] a name or [illegible] their establishment [illegible] In England, [illegible]

NORTH CAROLINA, one of the thirteen original states of the American Union, having an area of 50,704 sq. m., and a population, in 1870, of 1,071,361, of whom 678,470 were whites, 391,650 colored persons, and 1,241 Indians.

Educational History.—The constitution of 1776 provided that "a school or schools shall be established by the legislature for the convenient instruction of youth, with such salaries to the masters, paid by the public, as may enable them to instruct at low prices; and that all useful learning shall be encouraged in one or more universities." This is believed to be the first declaration made by the authorities of the state in the interest of education. Nineteen years after, the state university was organized; but no action was taken for the establishment of public schools till 1816, when the general assembly, at the instance of the governor, took measures to provide a general system of public instruction. For this purpose, a committee of three was charged with the duty of devising such a system, in accordance with the recommendations of the governor and the assembly, previously made. The result of their action is best discussed under the three following heads: (I) The establishing of schools; (II) The mode of maintaining them; (III) The mode of supervising them.

I. The plan proposed by the committee was thorough, beginning with the establishment of primary schools, to be followed by academies which should prepare the way for admission into the university already established. In their deliberations, they considered the organization of the schools, their discipline and government, the course of studies to be pursued, the mode of instruction, the creation of a permanent school fund, and the constitution of a board for its management. Their report was favorably considered by the assembly, and passed to its first reading, but, unfortunately, went no further, owing to the difficulty of raising the money needed to make the proposed system effective. Nothing further was done till 1825, when a fund was created for the establishment and support of "common and convenient schools for the instruction of youth in the several counties of the state." For this purpose, the second section of the act of that year constitutes the governor, the chief justice of the supreme court, the speakers of the senate and house of commons, and the treasurer of the state, a board, "for the promotion of learning, and the instruction of youth". Under the name of The President and Directors of the Literary Fund, they were empowered to hold real and personal property, and to sell, dispose of, and improve the same. In 1832, Joseph Caldwell, the president of the university, aroused the attention of the state to the need of public schools, by the publication of a pamphlet consisting of eleven letters which had been furnished by him to a local paper. In these letters, he called attention to the progress made by the common schools of other states and countries, enumerated the difficulties in the way of such progress in North Carolina, and suggested means for surmounting them. In 1836, the board was changed so as to consist of the governor and three other members appointed by him biennially. In 1837, the legislature made it their duty to prepare a plan for common schools, suited to the resources and condition of the state. In obedience to this act, the board, in 1838, submitted an exhaustive report, in which, after comparing the educational condition of the state with that of others, and of the countries in Europe most advanced in this respect, they proposed to divide the state into 1,250 school-districts, and to erect in each a school-house of the best materials, and according to the most approved method in regard to size, plan, and location. According to the condition of the school fund at that time, it was estimated that each of these schools would receive about $240 annually. With the scanty means at the disposal of the people, they could hope only to lay the foundation of a system, trusting to after years to establish also schools and colleges for more advanced instruction. In January, 1839, the legislature took positive action upon the report, directing that counties should be divided into school-districts six miles square, and that an election should be held in each county to ascertain the wishes of the people in regard to the schools. Nearly every county voted in favor of their establishment. In all such counties, the county court was directed to levy a tax for the building of a school-house in each district, large enough to accommodate at least fifty pupils. It was also made the duty of the court to choose not less than five superintendents for the county, whose duty it should be to make the division into school-districts according to the plan already mentioned, and to appoint not less than three school-committee men in each, "to assist the superintendents in all matters pertaining to the establishment of schools in their respective districts."—In 1840, a school law was passed which substantially continued in force till 1865. By an act passed in 1844, county superintendents were permitted to lay out school-districts of such form and size, for one school each, as they might deem most convenient for the inhabitants of the county. As the money appropriated by the state was to be divided equally among the districts, the effect was to increase greatly their number. The result was, that about $250,000 was annually divided among the districts, the number of which had increased to 3,000, but without accomplishing the best results.

II. There have been two principal sources for the maintenance of the schools: (1) the income of permanent funds; and (2) taxes.

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NEW YORK, University of the City of, was founded in 1830. It is not denominational, nor, as its name might imply, a city institution. It comprises the following departments: arts, science, medicine, and law. Tuition in the departments of arts and science is free. The institution is supported by the rents of the university building and the income of an endowment of $200,000, with tuition fees in the departments of law and medicine. The course in the department of arts is similar to the ordinary college course in the older colleges. A school of civil engineering and a school of art are connected with the scientific department. In 1874—5, the number of instructors and students was as follows: arts and science, 14 instructors and 140 students; fine arts, 1 instructor and 13 students; medicine, 34 instructors and 385 students; law, 5 instructors and 55 students; total, 54 instructors and 593 students. The chancellors of the university have been as follows: the Rev. James M. Mathews, D. D., 1830—38; the Hon. Theodore Frelinghuysen, LL. D., 1838—49; the Rev. Isaac Ferris, D. D., LL. D., 1852—70; and the Rev. Howard Crosby, D. D., LL. D., the present incumbent, appointed in 1870.

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NORMAL COLLEGE. See NEW YORK (*City*).

NORMAL SCHOOL, the name given, in the United States and some other countries, to a school for the instruction and training of teachers, being a translation of the French term *école normale* (from the Latin *norma*, a rule or model), applied to such schools on their establishment in France. "The term *normal school*," says Hart (*In the School-Room*, Phil., 1868) "is an unfortunate misnomer, and its general adoption has led to much confusion of ideas." In England, these institutions are styled *training colleges*, and in Germany *seminaries*. Connected with these schools there are usually *model schools*, or schools of practice, in which the theoretical principles and methods taught are applied to the actual work of instruction and discipline. For full information in regard to the history, and the principles and plan of organization, of normal schools, see TEACHERS' SEMINARIES.

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appropriate. In 1837, the state received, by the removal of its deposits from the United States treasury, the sum of $1,433,757.39. This, with the exception of $300,000, was transferred to the literary board, to be set apart as a permanent fund for the maintenance of the schools, the income thence derived, with the amounts received from sources above specified, constituting the annual school fund of the state. The revenue from this source, in 1838, amounted to $100,000. In 1840, the permanent fund was $2,000,000, yielding an annual income of $120,000. The present permanent fund amounts to $2,190,564.65.

(2) *Taxes.*—In the report made to the legislature in 1838, by the literary board, the insufficiency of the income of the permanent fund for school purposes was plainly pointed out. In 1840, a tax was levied in each district sufficient to build a school-house; and, in 1844, each county was required to levy a tax equal to one half of the amount annually received from the literary fund. In 1868, the constitution of the state directed that "the general assembly, at its first session under this constitution, shall provide, by taxation and otherwise, for a general and uniform system of public schools." The following year, the school law provided that, in case any township should fail, at the annual meeting, to provide for schools to be taught four months in the year, the school committee should immediately forward to the county commissioners an estimate of the necessary expenses; and a tax equal to the amount of such estimate should be levied on the township by the county commissioners at the same time that the county taxes were levied. The act of 1871—2 required that a tax of 6⅔ cents on the $100, and 20 cents special tax, should be levied; and this, with 75 per cent of the state and county poll tax, and all other public school funds, should be paid at the rate of 50 cents per month, for each pupil attending the public schools. The present law, enacted in 1872—3, levies an annual tax of 8⅓ cents on the $100, and a special poll-tax of 25 cents; and this, with 75 per cent of the state and county poll-tax and all other school money, is distributed among the school-districts according to the number of children of school age in each.

III. The report of the president and directors of the literary fund to the legislature, in 1838, called attention to the fact that no supervision of the schools was maintained by the intelligent portion of the community, on account of their want of pecuniary responsibility, and suggested that the portion of the literary fund due each county should not be distributed till the county court should have levied and collected twice the amount due from the fund to the county. They recommended a thorough organization and supervision of the schools. In 1852, Rev. Calvin H. Wiley was appointed superintendent of schools, and retained the position till 1865. At that time the public schools were closed for want of funds, and remained so till 1870. His successors have been S. S. Ashley, till 1872; Alexander McIver, till 1875; and Stephen D. Pool, the present incumbent (1876).

School System.—The general supervision of the schools of the state is vested in a *state board of education*, which consists of the governor, the superintendent of public instruction, the secretary of state, the treasurer, the auditor, and the attorney-general. Of this board, the governor is the president, and the state superintendent, the secretary. The immediate control of the schools is committed to the state superintendent, who is elected by the people for four years. *County commissioners* are also chosen, who are charged with "a general supervision and control of the schools in their respective counties". Their duties relate chiefly to the financial management of the schools; though, in other respects, they have considerable discretionary power. Their efficiency, however, is impaired by the fact that their duties are confined entirely to office business, there being no visiting of the schools on their part, as in other states. In each township, a *school committee* of three is elected biennially. This committee is empowered to purchase and hold real estate and personal property, to receive any gift, grant, or donation made for the use of any school within its jurisdiction, and to sell or transfer the same for school purposes. It is required to make, for the use of the county board, an annual census of all children of school age, designating race and sex, of all public schools, and the number of children who do not attend school. It is also required to divide the township into suitable districts, and to establish separate schools for white and colored children. This committee, also, has the power to employ and to dismiss teachers, and to regulate their salaries, subject to certain restrictions as to grade. Public schools must be maintained not less than four months each year. The school age is from 6 to 21 years. The choice of text-books rests partly with the teachers and partly with the state board; but no sectarian or political text-books are permitted.

Educational Condition.—The number of schools in the state, as reported in 1874, was 4,020, of which 2,820 were for white, and 1,200 for colored children. The support of the schools was derived from the following sources:

From the state treasury......	$ 36,230.67	
From poll-tax................	148,609.92	
From property-tax............	109,434.94	
Balance from previous year...	202,129.70	
Total..................		$496,405.23

The *expenditures* were as follows:

For salaries of teachers of white schools..............	$182,646.53	
For salaries of teachers of colored schools..............	77,615.25	
For county examiners........	2,854.55	
For school-houses............	22,676.46	
For county treasurers' commissions.................	11,802.06	
Total..................		$297,594.85

In addition to this amount, $12,450 was distributed among 30 public schools from the Peabody educational fund.

The principal items of *school statistics* were the following:

No. of children of school age, white,	242,768	
colored,	127,192	
Total......		369,960

No. of children attending school, white,	119,083	
colored,	56,000	
Total		175,083
No. of teachers employed, white male,	1,495	
white female,	613	
Total white		2,108
colored male,	615	
colored female,	252	
Total colored		767
Whole number of teachers employed		2,875

Normal Instruction.—In the pamphlet published by the president of the state university, referred to above, special attention was called to the need of qualified teachers, and a plan was proposed for supplying this deficiency. No immediate action, however, was taken. The report of the president and directors of the literary fund, in 1838, also called attention to the subject, and urgently recommended the establishment of normal schools for the education of teachers, and advised, also, the establishment of a normal department in the state university. The Ashboro' Normal School was organized, in 1873, by the Randolph County Educational Association, and was conducted by the superintendent of the association, one month in 1873, and one in 1874. In the former year, 100 teachers received instruction; in the latter, 75. The Lexington Normal School was organized by the Davidson County board of education, under a special act of the legislature, in August, 1874, and continued in session 25 days, under the direction of the chairman of the county board of examiners. In this school, separate instruction was given to 36 white teachers, and 35 colored teachers. The normal department of Shaw University, at Raleigh, in 1874, had 3 resident instructors and 60 pupils, of whom 40 were males, and 20 females. Besides these, *teachers' institutes* are held in various parts of the state. The Williston Academy and Normal School, at Raleigh, also affords special instruction to teachers. It is supported by the American Missionary Association. —The *State Educational Association* was established July 11., 1873.

Secondary Instruction. — Of institutions of this grade, there were reported, in 1875, to the U. S. Bureau of Education, 27, with 84 teachers and 1,638 pupils, of whom 478 were in classical studies, 201 in modern languages, 217 preparing for a classical course in college, and 53 for a scientific course. There are also preparatory departments in several of the colleges, which, in 1875, reported 426 students.

Superior Instruction.—The institutions which furnish instruction of this grade are included in the following table.

NAME	Location	When founded	Religious denomination
Davidson College.....	Dav. Coll.	1837	Presb.
North Carolina Coll..	Mt. Pleasant	1859	Luth.
Rutherford College..	Excelsior	1870	Non-sect.
Trinity College.......	Trinity	1853	M. Epis.
Univ. of N. Carolina..	Chapel Hill	1795	Non-sect.
Wake Forest College.	Wake Forest	1834	Bap.
Wilson College.......	Wilson	1872	Non-sect.

Besides these, there are several institutions for the higher education of women. Of these, 6 reported, in 1874, to the U. S. Bureau of Education, 70 instructors and 580 students.

Scientific and Professional Instruction.—Connected with the state university, there are schools of natural science, including chemistry, physics, and engineering, and a school of agriculture, endowed with the congressional land grant. Shaw University has a theological department; Trinity College, a theological and a law department; and Rutherford College, a law school.

Special Instruction.—The institution for the instruction of the deaf and dumb, and blind, was founded at Raleigh in 1847. It had, in 1875, a corps of 12 instructors, and 208 pupils, of whom 132 were deaf-mutes, and 76 were blind. Special attention is given to music, and there is a mechanical department, in which practical instruction is given in several industrial branches. The education of colored children of this class was first undertaken in this institution. The Oxford Orphans' Home, at Oxford, under the care of the Marion Fraternity, affords an asylum for 115 orphans. It is sustained by voluntary contributions. There is a branch asylum at Mars Hill.

NORTH CAROLINA, University of, at Chapel Hill, N. C., was chartered in 1787, and organized in 1795. Exercises were resumed, after a period of suspension, in Sept., 1875. It comprises six colleges; namely, of mathematics, of literature (including the schools of Greek, Latin, and modern languages), of philosophy (schools of metaphysics, and of history and political science), of natural science (schools of chemistry, applied chemistry, and physics), of engineering, and of agriculture (endowed with the congressional land grant, and including schools of natural history, chemistry, and military tactics). Three regular courses have been established: the classical (4 years), leading to the degree of Bachelor of Arts; the scientific (3 years), leading to the degree of Bachelor of Science; and the course in agriculture (3 years), leading to the degree of Bachelor of Agriculture. The university has an extensive collection of geological and mineralogical specimens, and a library of about 5,000 volumes and 2,000 pamphlets; the libraries of the two literary societies contain about 7,000 volumes each. The cost of tuition is $60 a year. In 1876—7, there were 9 instructors and 100 students (45 classical, 31 scientific, 7 agricultural, and 17 optional). Kemp P. Battle is (1876) the president.

NORTHERN ILLINOIS COLLEGE, at Fulton, Ill., was first opened, in 1861, as the Western Union College and Military Institute. In 1866, it was chartered and opened as the Illinois Soldiers' College for the education of disabled soldiers and sailors of the state. The name was changed in 1873, when the college was thrown open to both sexes. It is supported by tuition fees and the income of an endowment of about $20,000. The college building originally cost $100,000. The library consists of over 1000 volumes; the cabinet is well furnished with specimens in geology, mineralogy, and palæontology; and the laboratory has a valuable set of philosophical and chemical apparatus. The regular tuition fees vary from $27 to $32½ per year. The college has a preparatory collegiate course, an academic course (designed especially for those preparing themselves for teaching or business), and a regular graduating course of four years, which seems to be similar to the courses of the higher female seminaries. Female students who complete the full course, or its equivalent, receive the degree of Mistress of Liberal Arts (M.L.A.); those completing the English studies of the course, that of Mistress of English Literature (M. E. L.); and male students completing the course, the degree of Bachelor of Science (B. S.). In 1875—6, there were 10 instructors and 111 students (66 males and 45 females). The presidents have been, Leander H. Potter, A. M., 1866—73; William D. F. Lummis, A. M., 1873—5; and the Rev. Joseph W. Hubbard, A. M., the present incumbent, appointed in 1875.

NORTH WESTERN CHRISTIAN UNIVERSITY, at Irvington, Ind., founded in 1853, is under the control of the *Christian* denomination. It was removed from Indianapolis to its present site, about four miles east of that city, in 1875. It has a fine new building and a campus of 25 acres, situated in a natural grove of forest trees. It is supported by the interest on an endowment of $300,000, the tuition fees being merely nominal. The endowment property of the institution amounts to nearly $1,000,000. The university is open to all without distinction of sex, race, or color. It comprises a college of literature (classical), a college of sciences, a college of the Bible (theological), and a college of business, with classes preparatory to the classical and scientific departments. In 1875—6, the students were as follows: college of literature, 25; college of science, 12; preparatory, 48; college of the Bible, 23; college of business, 44; total, deducting repetitions, 129. There were 11 instructors. The presidents of the university have been as follows: John Young, LL. D., 1855—7; S. K. Hoshour, D. D., 1858—61; A. R. Benton, LL. D., 1861—8; Otis A. Burgess, D. D., LL. D., 1868—70; W. F. Black, A. M., 1870—73; and Otis A. Burgess again, since 1873.

NORTHWESTERN COLLEGE, at Naperville, Ill., organized in 1861, and chartered in 1865, is under the control of the Evangelical Association. It admits both sexes. The productive funds amount to $85,000; the value of its grounds, buildings, and apparatus is $50,000. The institution has a German course, an English-German course, a commercial department, and an art department, in addition to the usual classical and scientific courses. In 1873—4, there were 11 instructors and 405 students, including 42 of collegiate grade. The Rev. A. A. Smith, A. M., is (1876) the president.

NORTHWESTERN UNIVERSITY, at Evanston, Ill., under Methodist Episcopal control, was chartered in 1851, organized in 1853, and opened in 1855. It consists of the following departments, or colleges: (1) literature and science; (2) technology; (3) literature and art (Woman's College); (4) conservatory of music; (5) college of theology (Garret Biblical Institute); (6) law (Union College of Law of the University of Chicago and the Northwestern University); (7) medicine (Chicago Medical College); (8) preparatory school. Departments (6) and (7) are located in Chicago. The university has a library of about 25,000 volumes, including pamphlets, and valuable apparatus and cabinets. The value of its buildings, library, and apparatus is $400,000; of other unproductive property, $500,000; productive property, $440,000. In the theological department, tuition is free; in the first three departments enumerated above, the cost is $45 per annum. There are six parallel courses of four years each, three in the college of literature and science (classical, Latin, and scientific, and a course in modern languages), and three in the college of technology (a course in chemistry, a course in engineering, and a course in natural history). The courses in the Woman's College are the same as those in the colleges of literature and science, and of technology. In 1873—4, the number of instructors, in all the departments, was 62; and of students, 866. The presidents of the university have been as follows: the Rev. Dr. Clark T. Hinman, 1853—6; the Rev. Dr. R. S. Foster, 1856—60; Prof. Henry S. Noyes (vice-president), 1860—67; the Rev. Dr. E. O. Haven, 1869—72; and the Rev. Dr. Charles H. Fowler, since 1872.

NORTHWESTERN UNIVERSITY, at Watertown, Wis., chartered in 1864, is under the control of the Evangelical Lutheran Synod of Wisconsin. It comprises a collegiate, a preparatory, and an academic department. The library contains about 2,000 volumes. The cost of tuition is $30 per annum. In 1874—5, there were 6 instructors and 180 students: collegiate, 22; preparatory, 61; academic, 97. The Rev. A. F. Ernst, A. M., is (1876) the president.

NORWAY. See SWEDEN.

NORWEGIAN LUTHER COLLEGE, at Decorah, Iowa, founded in 1861, is under Lutheran control. It is supported by collections in the congregations of the Norwegian Lutheran Synod of America. It contains 7 classes or grades, of one year each. Instruction is free, except in the two lower classes, where, since Sept. 1., 1876, $30 a year is paid for tuition. The value of buildings, grounds, and apparatus is $120,000; the libraries contain about 4,000 volumes. In 1875—6, there were 8 instructors and 200 students, the greater part in the preparatory department. The Rev. Laur Larsen has been the president from the organization of the college.

NORWICH UNIVERSITY, a military college, at Northfield, Vt., founded in 1834, is under Protestant Episcopal control. It has a preparatory, a business, and a collegiate department, with a classical and a scientific course, of four years each, and a philosophical course of three years, leading, respectively, to the degrees of B. A., B. S., and B. Ph. Drawing and military science are pursued throughout the three courses. The charge for tuition, board, etc., is $300 per year. In 1874—5, there were 8 instructors and 49 students. The Rev. Josiah Swett, D. D., is (1876) the president.

NOTRE DAME DU LAC, University of, a Roman Catholic institution at Notre Dame, Ind., was founded by the Congregation of the Holy Cross in 1842, and chartered in 1844. It has commodious buildings finely situated. The libraries contain nearly 30,000 volumes. The regular charge for board, tuition, etc., is $300 per year. The university has a classical, a scientific, a civil engineering, a law, and a commercial department, with preparatory and post-graduate courses. In 1875—6, there were 38 instructors and 324 students. The Very Rev. Edward F. Sorin, the founder of the institution, was its president for twenty-two years. The Rev. Patrick J. Colovin, C. S. C., is (1876) the president.

NOTT, Eliphalet, an American educator, born at Ashford, Ct., June 25., 1773; died at Schenectady, N. Y., Jan. 29., 1866. He studied theology, and was sent, as teacher and missionary, to central New York, locating himself at Cherry Valley. He was soon after called to the pastorate of the Presbyterian Church in Albany, where his sermon on the death of Hamilton made him celebrated. In 1804, he was chosen president of Union College, at Schenectady, which position he held till his death. During this long period, nearly 4,000 students were graduated. Dr. Nott's principal works are *Counsels to Young Men* (1810), often republished, and *Lectures on Temperance* (1847), besides many addresses, discourses, and sermons. Physical science, also, received a large share of his attention, about 30 patents for inventions having been obtained by him.

NOVA SCOTIA, a British province of North America, forming a part of the Dominion of Canada. It has an area of 21,731 sq. m.; and its population, in 1871, was 387,800. It was first settled, in 1605, by the French under De Monts, at Port Royal (now Annapolis); but, in 1621, the country being claimed as a part of Virginia, James I. granted it to Sir William Alexander, under the title of *Nova Scotia*. It, however, continued in the possession of France until 1713, when it was formally ceded to the English by the treaty of Utrecht. The island of Cape Breton was annexed to it in 1763, and the province of New Brunswick separated from it in 1784. In 1867, it became a member of the Dominion of Canada.

Educational History.— The highest school authority in the province, is the council of public instruction, composed of the members of the executive council. The superintendent, who is also a member, and the secretary of the council are appointed by the lieutenant-governor. The council appoints an inspector for each county, upon the recommendation of the superintendent, and with his concurrence prescribes text-books, library books, and school-house plans. The council also makes regulations for the expenditure of the school grants, for the location, construction, and control of county academies, and the classification of teachers; appoints four provincial examiners for teachers' licenses; determines appeals from trustees, and may take such action as any special exigencies require. The superintendent has, subject to the council, the supervision of the inspectors, the normal and the common schools, and the county academies, also the enforcement of the law. He inspects the academies, and, if directed, other schools; holds meetings and teachers' institutes; reports on school management and teachers' qualifications; furnishes printed regulations and instructions to school officers, and makes an annual report with suggestions. The lieutenant-governor appoints for the several districts, corresponding to the civil counties, a board of seven commissioners. The commissioners are required to name a day when all semi-annual school returns will be received at the inspector's office, and to endorse on each of such returns their approval or disapproval, and they may authorize, on the inspector's recommendation, the payment of a grant to a licensed teacher of a poor section. The commissioners may settle disputes in regard to teachers' salaries, and may appoint trustees in certain cases. They may, upon the inspector's report, declare school premises to be unfit for use; and in such a case, the provincial aid to the section is withheld unless the necessary improvement is provided. They may cancel or suspend the license of a teacher for sufficient cause; but in the case of incapacity or negligence, they must notify the trustees and the superintendent. The inspector is required to inspect semi-annually each school and academy in his district, and report thereon to the superintendent. He must also give such information to trustees and teachers as may be required, and assist in improving the methods of school management. He must make an annual report to the superintendent on the 1st of December, specifying the work performed and its results. Every section has a board of three trustees, one elected each year, from among the qualified voters at the annual meeting. If a section fails to elect a trustee, or a trustee refuses or fails to serve for twenty days, the commissioners are required to fill such vacancy. If a person elected a trustee, refuses or fails to serve, he is liable to a fine of $20, which is applied to aid the erection of school-houses. The school year consists of two terms: the winter term, from Nov. 1. to April 30., and the summer term, from May 1. to Oct. 31. The school time, holidays, and vacations are regulated by the council. Trustees must employ a licensed teacher, and, if necessary, an assistant, for not less than five months, or in a poor section, three months in a year. No teacher can establish a school without an agreement with the section trustees. The annual grant from the provincial treasury for the public schools is $117,000, of which the city of Halifax receives $7,500. This grant is divided according to the total days' attendance of registered pupils at the common schools, the distribution for each term being made for the corresponding term of the preceding year. Halifax constitutes one school section, with a board of thirteen commissioners, who form a corporation, and of whom seven are appointed by the government, and six by the city council. The governor may appoint principals of the normal and model schools, who with the approval of the council, may appoint their assistants. The general control of the normal school is in the hands of the superintendent. An annual grant of $600 is made to each county academy. The normal school has but one term, commencing on the first Wednesday in November, and closing on the Friday preceding the annual provincial examinations, in July. Before entering, every student must declare his or her intention to teach three years in the schools of the province; otherwise, a fee of $20 is charged. The chief town of each county is entitled to a grant for an academy, on complying with certain conditions. The first or highest department is open, free of charge, to all children of the county who are able to pass the required examination. Whenever the chief town fails to obtain the grant, or to maintain an efficient academy, the council reserves the right to treat with any other section in the county for the establishment and proper maintenance of such academy.—The annual examination of teachers takes place on the first Tuesday after July 15. All licenses are valid in any part of the province until revoked for cause; but nobody under 15 years of age is allowed to teach unless with the express approval of the inspector. A system of evening schools is authorized for persons over 13 years of age. The number of teachers, in 1874, was 686. The number of pupils enrolled during the year was 93,512; and the number present, of each 100 registered, was, in the winter, 52.9; and in the summer, 57.1. The normal school had 118 pupils under instruction and training, of whom 80 received licenses to teach. The total number of teachers examined was 1,198, of whom 594 were licensed. The expenditure for the public schools was $552,221, of which the government grant was $157,481; and for the normal and model schools, $4,733, all of which expense was borne by the government. In 1875, there were 10 county academies, with 43 teachers and 2,614 pupils. There are also a number of special academies, of which the Horton Collegiate School, with 145 pupils, and the Pictou Academy, with 120 pupils, in 1875, are the largest. The latter institution was founded, in 1816, on the plan of a Scotch college, but without the power of conferring degrees. In addition to these academies, there is a high school at New Glasgow, founded in 1860. The Institution for the Deaf and Dumb is almost entirely free; in 1875, it had 5 teachers and 42 students. The University of Dalhousie now virtually fills the place for many years occupied by the academy; and the latter is now organized as the highest or academic grade of the schools of the town. There were, in 1875, five colleges: Dalhousie College and University, Halifax; St. Mary's College (Roman Catholic), Halifax; Acadia college (Baptist), Wolfville; St. Francis College (Roman Catholic), Antigonish; and King's College and University (Church of England), Windsor. Of these, King's College and Dalhousie College are the largest. The former originated in a recommendation made by a committee of the House of Assembly, in 1787. It was founded by an act of parliament, in 1788, and received a royal charter from George III., in 1802. Connected with it, is a school of civil engineering, a library of 6,000 volumes, and a museum containing fine collections in the various departments of natural history. A collegiate school, which is also connected with it, prepares boys for the college. It had, in 1875, 5 professors and an endowment fund of $106,891. Dalhousie College had, in 1875, 6 professors and an endowment fund of $99,233. There is a medical faculty in connection with the college, in which, in 1875, there were 11 professors.—See Marling, *Canada Educational Yearbook for* 1876; Lovell's *Gazetteer of British North America.*

NOVELS. See Fiction.

NUMBER is here considered as a branch of elementary or object instruction. Great importance should be placed on the means by which children acquire their first ideas of number. Since a child's knowledge of this subject begins with counting, the first exercises for teaching it should be the counting of objects. The child may first be taught to count as far as *ten* by using the numeral frame (q. v.), or buttons, pencils, the fingers, sticks, marks, or other objects. Next he should be taught to count groups of balls, buttons, sticks, or other objects, used to represent the several numbers, *one, two, three, four, five,* etc. By using the groups of objects thus counted as illustrations of the several numbers, figures may readily be taught. Let the pupil count *one* ball on the numeral frame, *one* pencil, *one* finger, *one* mark, and then show him the figure 1 to represent the number of each object. Next let him count, in groups, *two* balls on the numeral frame, *two* pencils, *two* fingers, *two* marks, etc.; then show the figure 2 as a symbol of the number of objects in each group. Afterward, require the pupil to count balls, pencils, and other objects in groups of *three*, and then show the figure 3 as the representative of the number counted in each group. In a similar manner, the several figures from 2 to 9 may be associated, and their value learned by means of counting. In order to teach children the value of the several figures by personal experience, let them count in groups *two* balls, or buttons, etc., and observe that each group contains two *ones*, — that *two* is equal to *one* and *one* more, or two *ones*. After the pupils have counted several kinds of objects in groups of *three*, lead them to notice that *one* and *one* and *one*, or three *ones*, make *three*, also that *two* and *one* make *three*. Proceeding in the same manner to count in groups *four* objects, let the pupils observe that four *ones*, or *two* and *one* and *one*, or *three* and *one*, or *two* and *two*, or two times *two*, make *four*. By means of similar exercises, the value of each number from *two* to *nine* may be thoroughly learned by children. As additional exercises, or a review of previous lessons, let the pupils count as many balls on the numeral frame, or hold up as many fingers, as the given figure represents. By this means, all the figures from 1 to 9 may be learned as symbols of numbers. In subsequent lessons, for teaching figures as representatives of numbers greater than nine, let the figures be arranged in groups as follows:

First group, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Second group, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Third group, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29

and so on to 99. Requiring the pupils to count as many balls, or other objects, to represent in order the numbers symbolized by each of these groups, will lead them to understand the value of the numbers that are expressed with two figures. This part of the instruction may be greatly facilitated by giving the pupil several small sticks, like matches, and requiring him to count and tie in bundles as many sticks as each of the figures from 1 to 9 represents. Then to furnish the pupil with favorable opportunities of learning, by personal observation and experience, that each number represented by two figures in the second group is composed of one bundle of ten *ones*, and one or more single ones added, let him count and tie in a bundle ten sticks to represent the number 10; and then tie ten sticks in a bundle and add to it one single stick to represent the number 11, and so on to 19. Two bundles of ten sticks each may be made for the number 20, and two similar bundles and a single stick for 21; and so on to 29. In this manner, children may be taught to comprehend the value of all the simple numbers to 100. The knowledge obtained by means of the exercises described above will prepare the pupils to learn readily and intelligently both the value and the form of writing numbers through hundreds, and thereby to understand the principles of *numeration* and *notation*. See CURRIE, *Principles and Practice of Early and Infant School Education* (Edin. and Lond.); N. A. CALKINS, *New Primary Object Lessons* (New York, 1871).

NUMERAL FRAME. This simple apparatus has been in use for many centuries. In some form or other, it is now used for teaching number, in all parts of the world. It is sometimes employed to represent units, tens, hundreds, thousands, etc., in numeration. This use of the numeral frame renders it necessary to give artificial values to the balls on different wires; and notwithstanding that this is analogous, in order, to the arrangement of the numerical system of figures, there is danger that young children, by the use of it for this purpose, may become confused between the actual numerical value of a ball and its several artificial values. Inasmuch as numeration can be illustrated much more intelligently by the method described under *Number* (q. v.), if aided by the use of the blackboard, it is not advisable to attempt an explanation of it by the numeral frame; not, at least, until the pupils have acquired a definite understanding of the relation between the value of single figures, and their values as dependent upon their relative positions in regard to other figures. The most important uses of the numeral frame are, to teach a class of pupils to count, and to illustrate the value of numbers and figures; also to teach the first steps in adding, subtracting, multiplying, and dividing. For the first steps in adding, let the pupils add balls on the numeral frame, by *ones* as far as *ten*. When they can do this readily, let them add on the blackboard a column composed of 1s; then let them add a like column of figures on their slates. Subsequently, teach them to add balls on the numeral frame by *twos*; then to add a column of figure 2s on the blackboard; and then on their slates. When the adding of 1s and 2s has thus been learned, proceed in the same manner with *threes, fours,* etc. After the pupils have learned to add *threes* as above, they may be taught by these three steps to add 1s and 2s in the same column; then to add 1s, 2s, and 3s in the same column. In this manner the pupils may be taught to add readily and rapidly single columns composed of such figures as 6, 7, 8, 9. To give children an idea of subtraction, teach them to count backward on the numeral frame from ten; thus, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0. Subsequently, call on a pupil to hold the numeral frame, to take one ball from two balls, and tell how many remain; then one ball from three balls, etc. Proceed in a similar manner with other numbers, taking care to arrange the exercises so as to give the pupils as much actual practice as possible in taking balls or other objects from a larger number of objects. To illustrate the first ideas of multiplication to a class of young pupils, arrange the balls on the numeral frame in groups of *twos, threes,* etc. Place on one wire two groups of two each, and lead the pupils to perceive that they may say that, "two and two make four;" or that "two twos make four"; also that "two times two make four." Place on another wire three groups of two each, and let the pupils observe that "two and two and two make six;" or that "three twos make six," also that "three times two are six." Proceed in a similar manner with numbers, and so arrange the exercises as to furnish the pupils as much individual practice as possible. After each step has been illustrated by the numeral frame, place figures on the blackboard to represent what has been thus taught. To illustrate the first ideas of division, arrange balls in groups of *four, six, eight, ten,* etc., on the different wires. Lead the pupils to see that each of these groups can be divided into groups of twos. Then require them to divide the groups thus and tell how many groups of *twos* can be made from four balls, six balls, eight balls, etc. Let the pupils also find how many *threes* there are in six, nine, twelve; and how many *fours* in eight, twelve, etc. That which is learned in each step may be represented by figures on the blackboard.—(See NUMBER.)

OBERLIN, Johann Friedrich, a noted philanthropist, and the originator of infant schools, was born in Strasbourg, Aug. 31., 1740; died at Waldbach, in Alsace, June 1., 1826. He was educated in his native city, was occupied as private tutor for several years, and, in 1766, became Protestant pastor of a district in Waldbach, which had been reduced to a condition of poverty by the devastations of the Thirty Years' War. His office as pastor of Waldbach, in the Ban de la Roche, in which district the people had been brought to a condition of helplessness by ignorance and want, enabled him to exercise the power almost of a dictator; but this power he used solely for their good. His first measures were purely philanthropic. He introduced better methods of cultivating the soil, caused good roads, bridges, and dwellings to be constructed, and established schools, hospitals, and various new branches of manufacture. With the increase of material prosperity, the moral condition of the people was steadily advanced, till, at the close of his sixty years' labors, the population, originally 500, had increased to more than 5,000; and the success which attended his efforts, led, in after years, to an unquestioned recognition of his claim to a place among the world's benefactors. His distinctive educational work was the establishment of schools, since known as infant schools, but then termed asylums, resembling the *crèche* (q. v.). In these, he gathered together the children of his parishioners for amusement and instruction, while their parents were at work. The idea of instruction seems originally to have been secondary in Oberlin's mind, his first thought being to occupy the children so as to leave their parents free to carry out his plans for the amelioration of their condition. The idea of instructing them, however, must have presented itself almost immediately; and his method, by combining these two ideas, was productive of the happiest results. In all his efforts, he was affectionately seconded by his housekeeper, Louisa Schepler. Memoirs of the life of Oberlin have been published as follows: T. Sims, *Brief Memorials of Oberlin* (London, 1830); *Memoirs of Oberlin, with a short notice of Louisa Schepler* (London, 1838 and 1852); and a biography by H. Ware, Jr. (Boston, 1845).

OBERLIN COLLEGE, at Oberlin, Ohio, was opened in 1833 as the Oberlin Collegiate Institute, and received its present title in 1850. It is under Congregational control. Both sexes have been admitted from the first; and, in 1835, it was resolved to admit colored students. It has valuable apparatus and cabinets, and libraries containing about 14,000 volumes. The value of its buildings, grounds, and apparatus is $170,000; the amount of its productive funds, $115,000. The tuition fees are small. The college embraces four departments: (1) theology; (2) philosophy and the arts, with a classical and scientific course, a literary course, and select courses; (3) preparatory instruction, including a classical and an English school; and (4) a conservatory of music. In 1875—6, there were 33 instructors. The number of students was as follows: theological, 51; classical and scientific, 147; literary, 145; select, 66; classical schools, 250; English school, 379; conservatory of music, 288; total, deducting repetitions, 1216 (648 male and 568 female). The following are the names of the presidents: the Rev. Asa Mahan, 1835—50; the Rev. Charles G. Finney, 1851—66; and the Rev. James H. Fairchild, the present incumbent, appointed in 1866.

OBJECT TEACHING, a method of instruction in which objects are employed by means of which to call into systematic exercise the observing faculties of young pupils, with the threefold object, (1) to cultivate the senses, (2) to train the perceptive faculty, so that the mind may be stored with clear and vivid ideas, and (3), simultaneously with these, to cultivate the power of expression by associating with the ideas thus formed appropriate language. The merit of introducing object teaching as a special method of elementary instruction, is usually attributed to Pestalozzi; but Comenius, Locke, Rousseau, Basedow, Rochow, and others based their systems of education, more or less, upon the same principle; that is, they recognized the necessity of communicating ideas, or of affording to the mind the means to grasp ideas from objects, by actual perception, before attempting to teach the verbal expression of those ideas, and that, without such ideas, mere "book-learning" is useless. Pestalozzi appears, however, to have had only a slight knowledge of the works of those educationists. Inspired by the reading of Rousseau's *Émile* to study the phases of mental growth, he arrived at the conclusion that the teaching of his day was fundamentally wrong, from its violation of, or inattention to, the laws of mental development. These laws he believed to be, (1) that the knowledge of things should precede that of words; (2) that, for the acquisition of this knowledge, the only effective agents, in the first stages of mental growth, are the senses, chief of which is the eye; (3) that the first objects to be studied by the child are those immediately surrounding it, and these, only in their simplest forms and relations; and (4) that from these objects as a center, the sphere of knowledge should be widened by a gradual extension of the powers of observation to more distant objects. The first instruction, therefore, according to this plan, should consist in concentrating the attention upon concrete things, in such a way as to result in a thorough training of the observing faculties, so that the conceptions with which the mind is stored may be as well defined, and as true to nature, as possible. So impressed was Pestalozzi with the correctness, and the supreme importance, of this method, that he declares in, *Wie Gertrud* *ihre Kinder lehrt* (1806), that the sum of his achievements in education is the establishment of the truth that "the culture of the outer and inner senses is the absolute foundation of all knowledge—the first and highest principle of instruction." The failure of the first attempts of Pestalozzi and his followers, however, in the practical application of his theories, was discouraging; and the faith of the progressive educators who had accepted them as a new gospel, was seriously shaken. The reason of their failure, however, was that their practice was in conflict with the very principles which Pestalozzi had enunciated as fundamental. The human body, with which they began their instructions, is not only highly composite in its structure, and difficult of description in the language of the child, but, by its very nearness, is rendered unfit for an object of study by children, their senses being most powerfully, and, indeed, almost exclusively, turned to the observation of objects external to themselves. By attempting, therefore, to name in detail and to describe the limbs, their form, color, size, actions, and uses, the new theory was exposed to the ridicule of its enemies, and placed in serious peril. In all the Protestant countries of Europe, however, and especially in Germany, the leaven of truth contained in the principles of Pestalozzi, wrought a gradual but sure reform in the old method of instruction. Attention having been turned to a serious consideration of the new system, a number of pedagogical writers contributed, by their discussion of its principles, to give definite form to the truth of the theory, and gradually to improve its practice. Among these writers, the names of Harnisch, Denzel, Dinter, Diesterweg, Grassmann, Graser, Wurst, Curtmann, Völter, and Dittes, deserve mention, though scarcely any two of them agree as to the order in which the objects should be introduced, the relative importance of the purposes for which they are used, or the extent to which the exercises should be carried. Object teaching became universal in the primary schools; and the dignity and usefulness of the teacher were increased by the very impossibility of prescribing any one method in which the principles should be applied, thus giving special prominence to the fact that the determining cause in favor of one method over another was the individual ability of the teacher. Instead of one invariable method, which might be unintelligently acquired and mechanically applied, a variety of methods now presented themselves, each dependent for its success upon circumstances. The individuality of the pupil suddenly acquired a new importance; and the teacher's individuality, also, became, more than ever before, an essential factor in the successful conduct of the school. For the difficult work thus foreshadowed, a long and careful preparation was necessary on the part of the student. The first step in this preparation was the observation of the educational work of some good teacher; then, a thorough study, in the normal school, of the subjects of pedagogy, psychology, the history of education, the natural sciences, universal history, mathematics, and arts; and, finally, a course of practical teaching in trial lessons, under the supervision of model teachers and the student's own associates. Among the writers above mentioned, one of the principal points of controversy was in regard to the necessity of educating the senses. Many denied altogether this necessity, and insisted that object teaching should be reserved exclusively for exercises in using and understanding language. The senses, so they argued, take care of themselves, whenever an interest in surrounding objects is awakened by the necessities of daily life; and the common school, they said, can present but few objects of interest on which the senses can be profitably exercised. If, for instance, pictures of objects are presented—as is most frequently the case, and if these pictures are large and faithful copies of the originals—which is rarely the case—the exercise is still confined to only one sense; and experience proves that this is insufficient to awaken a lively interest. The impression made on the sight, therefore, is short-lived and feeble. If, on the other hand, the objects themselves are produced, as these are generally house utensils, or articles of school furniture, only a languid interest is aroused in the pupils' minds, because there is rarely any new feature to be observed in objects so familiar. The incentive to any observation or comparison of qualities, therefore, is utterly wanting; and any sharpening of the senses is improbable. If, on the contrary, the exercises upon objects be carried on for the purpose of enriching the child's vocabulary, and of storing his mind with just and accurate conceptions, by causing him to connect with every word its proper idea, all will have been done to benefit the pupil that can reasonably be expected. The opponents of this view, however, insisted that the use of object teaching for the exclusive purpose of the acquisition of language, would overthrow that fundamental principle of the system which discountenances mere word learning. The correct understanding and use of language, also, they thought, could be learned as well from books and conversation; while, if the child is made to understand, that to talk fluently and correctly of objects is all that is required, and that a real knowledge of those objects is of no consequence, clever talk will always be more highly valued by him than exact knowledge. According to their view, the pupil brings with him to the primary school only the raw material out of which objective knowledge and the proper use of the senses may be developed: his mental pictures are wanting in definiteness and in order. These must be taken to pieces, *i. e.*, analyzed, and recomposed, *i. e.*, synthetized, at the sight, hearing, or touch, of real objects. If the interest of the children in the exercise of the senses is lacking, it is the teacher's duty to excite it; and this should be easy with young children, if the teacher's interest in the subject is lively enough to communicate itself to them.—While the rapid progress of science and art in our day infinitely augments the mass of knowledge which it is desirable and important for every body to learn, the increasing artificiality of our daily life tends to alienate us from a spontaneous exercise of our senses; and this deficiency must be supplied by education, to enable us to compass the amount of knowledge which it is desirable to acquire. The exercise of the senses is not only practically useful, but it is, in most cases, full of interest. To illustrate this, let pupils be asked to estimate by sight the length of a pen-holder, the dimensions of a window pane, distances on the floor or on the ground, the weight of objects that can be held in the hand; or to distinguish shades of color, and the differences in pitch or quality of musical sounds. Such exercises are not only amusing, but useful; while, on the other hand, there is abundant evidence that the circumstances of daily life do not, of themselves, educate the senses. Thus, let a dozen countrymen be asked the length of a certain way over which they often travel, and the probability is that a dozen different answers will be given, many of them wide of the mark. Instances might be multiplied indefinitely to show that the senses are not self-educative. Some educators, while not objecting to any of the five purposes to which object lessons may be applied; namely, (1) the preparation of the pupil for serious learning; (2) the sharpening of the senses, and the exercise of all the mental functions; (3) exercise in language; (4) the acquisition of knowledge; and (5) moral training; still have insisted that a distinction should be made between *object teaching* and *objective teaching;* the former comprising exercises in which the objects are taught for themselves, *i. e.*, for instruction in all the properties which are peculiar to them; the latter, for the acquisition of that generalized or fundamental knowledge which is common to many widely different objects. The former, they contended, should occupy only a part of the time during the first year or two, after which it should cease; but every branch of learning should, in turn, be treated objectively. The method of procedure should be, first, the presentation of the object. This should be analyzed by the pupils, and immediately reconstructed, the teacher supplying nothing but technical terms which are supposed to be unknown to the pupils, but guiding them by conversation to observe, compare, and reason correctly and in proper language, to rise from the single features of the object to its entirety, from similar features to generalizations, from the concrete to the abstract, from facts to laws. The opponents of this view said that the principle was good, but did not go far enough. In the first place, there is a vast body of knowledge that cannot be treated objectively. All facts, for instance, in regard to the days of the week, and the months, their names, number, etc.; many facts in regard to time, such as the number of seconds in a minute, the number of minutes in an hour, etc., the names of the seasons, the method of telling time by the clock,— these and many other necessary facts cannot be objectively presented, but must be learned arbitrarily; while, at a later period in education, there appear astronomical, geographical, and historical facts, which must simply be taken on trust, and committed to memory. In view of these things, text-books are indispensable; and all attempts to teach without them are useless, and result in a waste of precious time. While recognizing, therefore, the value of object teaching in many branches, and its pre-eminent value in a few, they assert that it has its natural limitations beyond which memorizing and an adherence to the text-book are the only proper means to be relied upon by the teacher. At the present time, this latter view—that a combination of the two methods should be employed, is in the ascendant. In Europe, especially in Germany, this reactionary movement is thought to be fostered from political and religious motives. In the United States, the demand for teachers has so far exceeded the supply from the normal schools, without a corresponding rise in salaries, that the standard of qualifications for teachers has not been maintained at the height which many educational reformers had hoped it would be. In short, the principles and system of Pestalozzi cannot be said, at the present time, to be fully carried out. Object teaching should be begun as early as possible, and in the manner of the kindergarten, and should be followed by objective and conceptive teaching, which should be carried through every branch of learning. The mental growth of pupils, however, should not be retarded by a superfluous use of this method. A safe criterion, by which the teacher may know, at any moment, whether he has made a proper use of the object method, may be found in the self-activity of his pupils, their ability to grasp, in their answers to his questions, the general fact, proposition, or law. The new method is justly called the *developing method* (q. v.), the pupils' minds being made to develop themselves, the teacher only suggesting what they are to discover. Every pupil is, as it were, to rediscover every science in the genetic method (q. v.), a difficult task for the teacher, and apparently a circuitous way for the pupil. But because of its thoroughness, it is the most rapid way of learning; and its results are indelibly fixed in the mind. This method, also, if early begun, and consistently carried out, is successful with every child, and saves precious time, which, later in life, may be devoted to those higher branches that lie beyond the common-school course, but which are every year becoming, in many cases, highly desirable, and, in some, indispensable. The literature of object teaching is much too extensive to permit the enumeration here of more than a few of the principal works. Pestalozzi's complete works are now (1876) undergoing, in Germany, a second revision. Diesterweg's monthly, *Rheinische Blätter*, contains, in its long series, and in its continuation by Wichard Lange, more information on this subject than any other work. The latest German work of a progressive nature is Fr. Dittes's *Die Methodik der Volksschule auf geschichtlicher Grundlage* (Leipsic, 1874). In English literature, compare the works enumerated under *Kindergarten.* See also, KRUSI'S *Biography of Pestalozzi* (Cin., 1875); HAILMAN, *History of Pedagogy* (Cin., 1874); and, *Outlines of Object Teaching* (N. Y., 1867); N. A. CALKINS, *Primary Object Lessons* (N. Y., 1873); CURRIE, *Principles and Practice of Early School-Education* (Edin., 1857); BARNARD, *Object Teaching* (N. Y., 1860). (See also COLOR, FORM, NUMBER, and PESTALOZZI.)

OBSERVING FACULTIES. See INTELLECTUAL EDUCATION, and OBJECT TEACHING.

OHIO, one of the central states of the American Union, at first a part of the North-west Territory, was admitted into the Union as a state in 1802, but not organized as such till March, 1803. Its area is 39,964 sq. m.; and its population, in 1870, was 2,665,260, of whom 63,213 were colored persons.

Educational History.—The germ of public education in Ohio is to be found in the ordinance of July 13., 1787, enacted to provide a territorial government for the region north-west of the Ohio river. At that time, an association of people of New England—chiefly soldiers of the Revolution—organized as the Ohio Company of Associates, was negotiating with Congress for a large tract of land in the west. Gen. Rufus Putnam was the acknowledged leader of the movement, and the Rev. Manasseh Cutler, LL. D., of Massachusetts, was the agent to purchase the land. The latter was a man of broad and liberal culture; and, at the time the ordinance was framed, was consulted as to its provisions. It is believed that to him more than to any other person are to be attributed those clauses which have made the ordinance so famous and useful: the prohibition of slavery, and the declaration that "religion, morality, and knowledge being necessary to good government and to the happiness of mankind, schools and the means of education shall be forever encouraged." By the contract afterward signed by Dr. Cutler and Winthrop Sargent, on the part of the Ohio Company, and by the Board of Treasury, Oct., 1787, it was stipulated that lot or section number sixteen in each township should be set apart for the maintenance of schools, and also, that two complete townships should be given perpetually for the purposes of a university. Under this contract, a settlement was made at Marietta, April 7., 1788. This was the first organized white settlement within the present limits of Ohio. Stimulated by the example of the Ohio Company, John Cleves Symmes, of New Jersey, negotiated, in the latter part of the year 1787, for a tract of land lying between the two Miami rivers—the region which now includes Cincinnati. In connection with this purchase, Congress gave another township of land for a university. Congress afterward gave the sixteenth section in each township of the state, or an area equal to this, for the support of common schools. Thus one thirty-sixth part of all the land of the state was devoted to common schools, besides the three townships for universities. The early schools in the state were private schools. They were more numerous in the settlements formed by immigrants from the more enlightened portion of the older states. Often graduates of Yale or Harvard were teachers; but, as a rule, the teachers had little education, and the range of instruction was very limited. In the course of time, school-districts were formed, and the small revenues from leases of school lands were applied to the payment of teachers. Thus the schools gradually were changed from private schools to public schools under legal control. The first general school law was enacted in 1821. This authorized the division of townships into school-districts, upon a majority vote of the resident householders, the appointment of these householders as school-committee men, the erection of school buildings, the employment of teachers, and the levying of taxes upon all the parents and guardians of children attending the schools, who were able to pay. Under this law, however, action on the part of the people was not obligatory; and the attitude of charity assumed by its provisions toward the poor man caused it to become unpopular. In 1825, another general school law was passed by which, for the first time in the history of the state, a county tax for the support of the schools was directed to be levied. This law provided for the "instruction of youth in reading, writing, arithmetic, and other necessary branches of a common education." It authorized the appointment, by the court of common pleas, of examiners of schools, whose duty it was to grant teachers' certificates to such applicants only as should pass a satisfactory examination in spelling, reading, writing, and elementary arithmetic. In 1829, it was found necessary to supplement the county tax by an assessment of rate-bills on all school patrons, in order to keep the schools open for a reasonable period. The organization at Cincinnati, in 1831, of a college of teachers, composed of the most prominent educators of Ohio and the neighboring states, led to a general awakening on the subject of education, and to the need of a superintendent of common schools. In 1837, accordingly, the office of state superintendent was created; and statistical information in regard to the schools was first collected by the state school department created partly for that purpose. The first annual report of the state superintendent was largely instrumental in bringing about the enactment of the school law of 1838, by which a state school fund of $200,000 was created, a county tax of 2 mills, and local taxes for the building of school-houses were imposed, and reports from teachers were required. From 1840 to 1853, the secretary of state was, *ex officio*, state superintendent. In the latter year, a law was passed making each township a school-district, and creating a township board of education, whose duty it was to make an estimate, annually, of the money required for the schools, except for the payment of teachers; to establish high schools in each district, if deemed necessary by a majority of voters—the latter to decide the amount of tax to be levied for the purpose; and to levy a tax of not more than 2 mills on the dollar, for the payment of teachers in such schools, or for the purpose of extending the terms of the sub-district schools beyond the time provided for by the state funds. Every city or village of 300 inhabitants, also, was constituted a separate school-district. Various changes have been made in the law from that time to 1873, relating principally to the amount of the school tax, and the manner in which it should be levied. In that year, all previous school laws were codified; and a general law was enacted, by which the various systems of local organization were made uniform. Slight amendments were made to this law during that and the following year.

State Superintendents.—The first state superintendent of common schools was Samuel Lewis, chosen by the general assembly, March 31., 1837. He held the office until his resignation, in 1840; when it was abolished, its duties being assigned to the secretary of state. Mr. Lewis was a man of great earnestness and vigor, eloquent in his addresses, and of rare good sense. He did a noble work for the cause of popular education. The secretaries of state had little time to devote to the cause of education, and generally did little more than refer to the subject in their annual reports. Samuel Galloway, who was elected secretary in 1844, gave the subject much attention; and, by his stirring addresses and reports, exerted a wide influence. He held the office for six years. In 1853, the office of state superintendent was again made a distinct one, under the title of State School Commissioner, such commissioner to be elected by the people, and to hold office for three years. H. H. Barney was elected in the fall of 1853. He was succeeded by Anson Smith, who held the office for two terms,—from 1856 until 1862. C. W. H. Cathcart succeeded him, but resigned after holding the office nine months; and E. E. White was appointed by the governor to complete the term, which expired in 1865. His successor was John A. Norris, who was re-elected for a second term, but resigned in 1869; and W. D. Henkle was appointed to fill the vacancy. He was succeeded by T. W. Harvey, who continued in office one term. The present commissioner, C. S. Smart, entered upon his duty in 1875.

School System.—The principal educational officer of the state is the *state commissioner of common schools*, who is elected for three years. His duties are the following: to prepare annually a statistical report, showing the condition of the common schools; to make such suggestions or recommendations to the legislature concerning the schools of the state as he may deem proper; to visit annually each of the nine judicial districts of the state, "superintending and encouraging teachers' institutes, conferring with boards of education, and other school officers, consulting teachers, visiting schools, and delivering lectures on topics calculated to subserve the interests of popular education." *District boards of education* are elected by the people. They may authorize, for school purposes, a tax not exceeding seven mills on the dollar, may direct any language to be taught in the schools, and are required to provide instruction in German when it is demanded by 75 freeholders, on behalf of not less than 40 pupils who intend to study both German and English. They may also establish evening schools for whites, and separate schools for colored children, when these are more than 20 in number. In most of the cities and towns, the boards of education appoint superintendents, as officers of the local school systems. These superintendents have a general oversight of the public schools, but are themselves subject to the control of the boards of education. They visit the schools, give advice to the teachers, and look after many matters which would otherwise require the personal attention of the board. If they are persons of thorough culture, they elevate the literary character of the teachers and schools, and often exert a very wide influence. In some cases, the superintendent does a limited work of personal instruction in the schools. A *state board of examiners*, three in number, is appointed for two years by the state commissioner, to issue life certificates to teachers after strict examination. *County boards of examiners* are also appointed. The common-school fund of the state consists of the amount derived from a one-mill tax on taxable property, and from the proceeds of the sales of public lands. The lands set apart for common schools were for a time leased, but have now nearly all been sold. The proceeds of the sales of these school lands constitute "an irreducible fund for the support of the common schools of the township or other district having credit for the same." This fund yields an interest of six per cent. To this should be added rents etc. on unsold land, and the revenue from certain fines and licenses. The chief support of the schools, however, comes from direct taxes, state and district. At present, each civil township is a school-district, managed by a township board of education; and this district is divided into sub-districts for the convenience of the inhabitants. The title to grounds, school buildings, and all other property, is vested in the township board. The local directors of the several sub-districts employ the teachers, purchase or lease school-house sites, rent school rooms, buy fuel, and make all other provision necessary for the schools. There are, besides these, city districts of the first class, being cities with a population of over 10,000, city districts of the second class, containing a less population, and village districts. In these districts, the boards of education have somewhat enlarged powers. The legal school year is 24 weeks; the school age is from 6 to 21 years.

Educational Condition.—The whole number of township districts in the state, in 1875, was 1,337; of sub-districts in townships, 10,433; of city, village, and special districts, 605; and of district divisions included in city, village, and special districts, 701. The whole number of school rooms was 14,868, of which 450 were classed as high-school rooms. The whole number of school-houses was 10,695, the total value of which, including grounds, was estimated at $8,037,446. The whole amount of *school revenue* was as follows:

From interest on irreducible funds	$215,718.85
From rents of school lands	22,283.19
From state school tax	1,560,397.93
From local taxes	6,153,442.63
From sale of bonds	489,408.32
From fines, licenses, etc.	270,160.94
Total	$8,711,411.86

The expenditures were as follows:

For teachers' salaries	$4,787,963.76
For superintendents' salaries	158,773.64
For sites and buildings	1,313,514.86
For fuel and contingent expenses	1,391,704.42
Total	$7,651,956.68

The other important items of *school statistics* are the following:

No. of children of school age,	males,	522,418	
	females,	495,308	
Total			1,017,726
Total enrollment:	males,	375,436	
	females,	336,693	
Total			712,129
Average daily attendance:	males	225,531	
	females	209,918	
Total			435,449
No. of teachers common schools:	males,	9,759	
	females,	12,092	
No. of teachers in high schools:	males,	427	
	females,	214	
Total			22,492
Average monthly salary, common schools,	males,		$47
“ “ “ “ “	females,		$31
“ “ “ high “	males,		$72
“ “ “ “ “	females,		$57

Normal Instruction.—There are, in Ohio, no normal schools under state control. Such schools have been officially recommended by governors, school commissioners, etc., but the state has never established them. To meet this want, some of the cities have normal and training schools as a part of their school systems; and there are several private independent normal schools. The cities in which there are departments for training teachers connected with the public schools, are Cincinnati, Cleveland, Dayton, and Sandusky. The primary design of these schools is to prepare teachers for their own schools. Such teachers are generally graduates of the city high schools, or of schools of a similar grade. The students are not only instructed in the general principles and methods of teaching, but in the special methods in vogue in the schools of their respective cities. As a general rule, the graduates of these normal departments are given a preference, by the boards of education, in the appointment of teachers for the city schools. They also receive a larger compensation than teachers not so trained.—The private normal schools are the following: The McNealy Normal School, at Hopedale, Harrison Co.; the National Normal School, at Lebanon, Warren Co.; the Western Reserve Normal School, at Milan, Erie Co.; the Orwell Normal School, at Orwell, Ashtabula Co.; the Northwestern Ohio Normal School, at Ada, Hardin Co.; the Ohio Central Normal School, at Worthington, Franklin Co.; and the Southern Ohio Normal School, at Pleasantville, Fairfield Co.

Teachers' Institutes.—The law authorizes the teachers in each of the several counties to form an association and to hold annually an institute for the purpose of mutual benefit and instruction; and they are permitted to devote a week to attendance at the institute without any deduction from their salary as teachers. The surplus money derived from the examination fees paid by all teachers when examined by the board of county examiners, after the expenses of the latter have been deducted, constitutes an institute fund. The county commissioners may add to this fund, when necessary, a limited sum by direct appropriation. The meetings of these institutes are well attended, and are generally conducted with spirit. Methods of teaching the several branches of study, and of school management, are considered and discussed. In 1875, there were 92 institutes held, with an aggregate attendance of 10,125 teachers, at a total expense of $18,988.—Besides these county institutes, it has been customary, in several of the cities, to hold, each year, a local institute for the special benefit of the teachers of the city schools, the first week of the school year being devoted to this purpose.

Secondary Instruction.—The first graded course of instruction was adopted in Cincinnati soon after the year 1840. Since then, high schools have gradually been introduced into the cities and towns. The Cincinnati Central High School, with a graded course, was established in 1847, and classes were admitted from the lower schools once each year. The schools of Cleveland, Columbus, Dayton, and Portsmouth adopted, in the order named, the graded system; and afterward the system met with general favor in the larger places. These follow a graded system of instruction and generally require four years for the completion of the full course. Pupils pass, by examination, to the high schools from the grammar schools. In this way, there is a perfect gradation, and the pupils are taken through the progressive stages until they emerge from the high school with an excellent education. Eight years are spent in the common grades and four in the high school—in all twelve years. The high schools have largely displaced the old-fashioned academies upon private foundations; and if the high schools were good preparatory schools for the colleges, there would be no further need of academies in the state. Few of the high schools have a sufficiently thorough course of classical study to fit boys for the best colleges. Greek is often omitted altogether. Furthermore, in order to obtain the classical training furnished by the high school, it is generally necessary to take all the other studies of the full four years' course, some of which are included in the usual college course. Hence, the high schools do not, as a rule, serve as preparatory schools for the better class of colleges, such colleges in Ohio being obliged to organize preparatory departments of their own.

Superior Instruction.—Three state institutions for higher education have been established—the Ohio University, Miami University, and the Agricultural and Mechanical College. The state has never directly aided any of them, their endowments having been derived from lands granted by the general government.

The state, under the first constitution, granted college charters quite freely; and, under the present constitution, adopted in 1851, colleges may be incorporated under a general law without a special charter. Some of the colleges are close corporations, and are independent of state or ecclesiastical control. Western Reserve, Marietta, and Oberlin, are of this class. The trustees of the University of Cincinnati are appointed by the city council. The larger part of the colleges are under ecclesiastical supervision. Some of the Ohio colleges are modeled after the best institutions of the Eastern states, and are characterized by thorough and exact scholarship.

The following table contains an enumeration of all the important institutions of this grade in the state.

[The names of those for females exclusively are printed in *Italics*; those for both sexes, in SMALL CAPS.]

NAME	Location	When organized	Religious denomination
ANTIOCH COLLEGE....	Yellow Springs	1853	Unitarian
BALDWIN UNIVERSITY.	Berea	1856	M. Epis.
BUCHTEL COLLEGE....	Akron	1872	Univ.
Capital University....	Columbus	1850	Ev. Luth.
Cin. Wesleyan College.	Cincinnati	1842	M. Epis.
Denison University..	Granville	1831	Bap.
Farmers' College.....	College Hill	1847	Non-sect.
Franklin College.....	New Athens	1825	Un. Presb.
German Wallace Coll.	Berea	1864	M. Epis.
Heidelberg College...	Tiffin	1850	Reformed
Hillsboro Fem. College.	Hillsboro	1839	M. Epis.
Hiram College.......	Hiram	1867	Disciples
Kenyon College......	Gambier	1825	Pr. Epis.
McCorkle College....	Bloomfield	1873	Ass.Presb.
Marietta College......	Marietta	1835	Non-sect.
Mt. St. Mary's of the West..............	Cincinnati	1851	R C.
MT. UNION COLLEGE..	Mt. Union	1858	M. Epis.
MUSKINGUM COLLEGE.	New Concord	1867	Non-sect.
OBERLIN COLLEGE.....	Oberlin	1833	Cong.
OHIO CENTRAL COLL...	Iberia	1854	U. Presb.
OHIO UNIVERSITY.....	Athens	1804	Non-sect.
Ohio Wesleyan Univ...	Delaware	1844	M. Epis.
One Study University	Scio	1859	M. Epis.
OTTERBEIN UNIV......	Westerville	1847	U.Br. in C.
Richmond College....	Richmond	1835	Non-sect.
St. Xavier College....	Cincinnati	1831	R. C.
Univ. of Cincinnati...	Cincinnati	1873	Non-sect.
Univ. of Wooster.....	Wooster	1870	Presb.
Urbana University...	Urbana	1851	New Ch'ch
WESTERN RESERVE COLLEGE............	Hudson	1826	Non-sect.
WILBERFORCE UNIV...	Xenia	1856	Af. M.Epis
Wilmington College..	Wilmington	1870	Friends
Willoughby College...	Willoughby	1858	Meth.
Wittenberg College...	Springfield	1845	Ev. Luth.
XENIA COLLEGE.......	Xenia	1850	M. Epis.

Professional and Scientific Instruction.—The Ohio Agricultural and Mechanical College was opened, in 1873, near Columbus, the county of Franklin having offered $300,000 to secure it. The proceeds of the land grant of 1862, which constitute its endowment, have already reached the sum of $500,000. In addition to the necessary buildings and apparatus, it has a farm of 320 acres. Its object is to supply a general and scientific education rather than a professional one; and to this end its provisions are ample, consisting of well-equipped departments in all the branches of natural science ordinarily taught, supplemented by instruments, cabinets, and laboratories. In the course of study, a union of the obligatory and elective systems is followed. A fixed preparatory course of 2 years is pursued, at the end of which the student is permitted to enter whatever department he may choose. The number of instructors, in 1875, was 9; the number of students, 65. The Toledo University of Arts and Trades has been recently organized for the purpose of affording instruction to young men and women in the branches indicated by its name. In 1874, one professor gave instruction to 89 students. The institution still lacks many requisites for thorough efficiency, owing to its very recent establishment. The Lane Theological Seminary, at Cincinnati, was founded in 1829 by the Presbyterians. It provides a 3 years' course of study. In 1874, it had 5 resident professors and 49 students. Instruction in theology is also given at the St. Mary's Theological Seminary (R. C.), at Cleveland; the Theological Seminary of St. Charles Borromeo (R. C.), at Carthagena; the Heidelberg Theological Seminary (Reformed), at Tiffin; the Theological Seminary of the Evangelical Joint Synod of Ohio (Evang. Lutheran), at Columbus; the Union Biblical Seminary (Un. Brethren), at Dayton; and the United Presbyterian Theological Seminary, at Xenia. Several of the secular colleges and universities of the state also have separate departments for instruction in theology. The Ohio State and Union Law College was founded at Cleveland, in 1856. Its aim is to give each student a thorough theoretical and practical knowledge of law, and to accomplish him as an extemporaneous speaker. For the latter purpose, weekly debates are held, and law cases are provided in which the actual practice of the court room is illustrated. In 1874, the number of professors of all kinds was 8. There is also a law school connected with Wilberforce University, besides the Cincinnati Law School, formerly a department of Cincinnati College, closed since 1845. Several institutions exist for the study of medicine, the principal of which are the College of Medicine and Surgery, the Medical College of Ohio, the Miami Medical College, the Eclectic Medical Institute, the Ohio College of Dental Surgery, and the College of Pharmacy, all at Cincinnati; the Medical College and the Homœopathic Hospital College, at Cleveland; and the Starling Medical College and Hospital, at Columbus. There are departments, also, for the study of medicine in some of the colleges and universities.—Schools of drawing and design exist in connection with the University of Cincinnati and the Mechanics' Institute. The number of pupils in each is from 300 to 400.

Special Instruction.—The institutions for the blind, and for the deaf and dumb, located at Columbus, are, strictly speaking, schools. In them are taught, in addition to the elementary branches, all the studies of high schools, including Latin. The instruction is thorough and complete, and these institutions are an honor to the state. There is also, at Columbus, an asylum for idiotic and imbecile youth, which in its very nature is a school. Of the whole number under instruction in 1875, 253 had been taught to read and write. It has been ascertained that one-third of the inmates can be so trained as to be able to support themselves.

The Reform Farm for Boys, located near Lancaster, Fairfield Co., is also a school. This was the first reformatory in the United States to adopt the "family plan" and has proved a remarkable success. No walls, or cells, or iron bars restrain the boys. They are grouped into families under the care of "elder brothers", all under the general supervision of the commissioner in charge. Kindness, and appeals to the higher and better nature, and to Christian principles, are the guiding and controlling forces, the object being nurture rather than discipline or punishment. Of 704 boys, in 1875, only 30 attempted to escape. Many fugitives return voluntarily. Half of each day is spent in school, and the other half in work upon the farm and in shops, where the boys learn useful trades. Most of those who have been discharged have become useful members of society. There is a similar reform school for girls, at White Sulphur Springs, Delaware Co., called the Girls' Industrial Home. The girls are grouped into families and are well taught in the ordinary branches of education.—The Soldiers' and Sailors' Orphans' Home, located near Xenia, Greene Co., is a school as well as a home. The graded system is adopted, crowned with a high school. Besides the above institutions supported by the state, there are many of local character in which instruction is given to the young.—The Cincinnati House of Refuge is a reform school, in which study and work are combined. The Cleveland House of Refuge is similar. The Industrial School of Cleveland is a private enterprise, where instruction in letters, as well as in sound morality, is given. There are in the state many homes for poor children, supported, in whole or in part, by towns or counties. In all these, the elementary branches are taught.

Educational Literature.—Many different educational journals have been published in Ohio, but most were short-lived. The *Ohio School Journal* was established by Dr. A. D. Lord in 1846, and published at Columbus. In the same year, the *School Friend* was issued by W. B. Smith and Co., of Cincinnati. These two journals were united, in 1850, under the joint names. The last issue was in September, 1861. The *Ohio Journal of Education* was issued in January, 1852, under the auspices of the State Teachers' Association, with Dr. Lord as chief editor, assisted by several of the leading educational men in the state. It has had a long succession of editors and several different publishers. In 1860, its name was changed to *The Ohio Educational Monthly;* and, in 1861, it passed under the control of E. E. White and Co., Anson Smyth being the partner. Mr. Smyth retired after two years, and Mr. White continued to edit and publish it until 1875, when it was transferred to its present proprietor, W. D. Henkle. In 1870, Mr. White issued an edition of the *Monthly* for circulation within the state, which was called the *National Teacher.* This journal has been the leading educational publication in the state since the day of its establishment. In 1875, W. D. Henkle commenced the publication of the *Educational Notes* and *Queries,* which supplies a want, and has already attained a wide circulation.

Teachers' Associations. — In 1829, "some twenty" teachers in Cincinnati organized an association for mutual benefit, called the *Western Literary Institute and Board of Education.* They held monthly meetings and an anniversary meeting. In 1831, this institute was merged in a new association, entitled the *College of Teachers,* having in view the elevation of the profession of teaching. Annual meetings were held, in which valuable and elaborate addresses and reports were made by the more prominent teachers and friends of education of Cincinnati and of the Ohio valley. In the fourteen years of its existence, more than three hundred such addresses and reports were given. The first *state convention* for the promotion of public education was held in Columbus, January 13., 1836. Similar conventions were held in 1837 and in 1838. The *Ohio State Teachers' Association* was formed at Akron, Dec. 30., 1847. This association has been continued to the present time, and has proved a most efficient aid in promoting the progress of popular education in the state. It meets annually, and is conducted with intelligence and spirit. A somewhat similar association for mutual consultation was formed, in 1867, by representatives of many of the colleges, which is called the *Association of Ohio Colleges.* Annual meetings are held, and the association is doing much good. In addition to these state associations, there are several more local in character, such as the *North-Eastern Ohio Teachers' Association*, and the *Central Ohio Teachers' Association.* There are also many county teachers' associations. A *History of Education in Ohio* was published in 1876, as "a centennial volume", by order of the general assembly of the state. It was accompanied by a volume of *Historical Sketches of the Public Schools,* and another of *Historical Sketches of the Higher Educational Institutions.*

OHIO CENTRAL COLLEGE, at Iberia, founded in 1854, is a non-sectarian institution. It comprises an English department, especially designed for those preparing to be teachers in the common schools; a preparatory department; and a collegiate department, with a classical and a scientific course. Both sexes are admitted. The cost of tuition ranges from $18 to $24 per year. The Rev. Wm. Maclaren, D.D., is (1876) the president.

OHIO UNIVERSITY, at Athens, Ohio, was founded upon a grant of two townships of land by the general government for the endowment of a state university. This was the first educational endowment by the general government, being made in 1787. The lands to be devoted to the support of the university were located in 1795; and, in 1802, an act was passed by the territorial legislature, establishing the institution under the name of the American Western University. Nothing was done under this act; and, in 1804, the institution was chartered as the Ohio University. Instruction commenced in 1809; but a full faculty was not organized till 1822. The institution is supported by the rents from its endowment and by tuition fees. It has a cabinet, apparatus, and libraries containing 8,000 volumes. The university comprises a preparatory department and a collegiate department, with a classical course of four years, and a scientific course of three years. Both sexes are admitted. The cost of tuition is $18 a year in the preparatory, and $30 in the collegiate, department. One student from each county of the state is admitted free of tuition. In 1875—6, there were 6 instructors and 100 students (46 collegiate and 54 preparatory). The presidents have been as follows: the Rev. James Irvine, A. M., 1822—4; the Rev. Robert G. Wilson, D.D., 1824—39; the Rev. William H. McGuffey, D. D., LL. D., 1839—43; the Rev. Alfred Ryors, D. D., 1848—52; the Rev. Solomon Howard, D. D., LL. D., 1852—72; and the Rev. William H. Scott, A. M., the present incumbent, appointed in 1873.

OHIO WESLEYAN UNIVERSITY, at Delaware, Ohio, founded in 1842, is under Methodist Episcopal control. The grounds consist of 30 acres, and contain four college buildings. There are cabinets of archæology, geology, mineralogy, and natural history, and libraries containing 13,000 volumes. The university has an endowment of $300,000; and the value of its buildings, grounds, etc., is $200,000. Scholarships, admitting the student to all the studies required for graduation, can be purchased at the university at prices as follows: perpetual scholarships, $500; for twenty years, $100; ten years, $50; six years, $30; four years, $20; two years, $15. There is a collegiate and a preparatory department (with a classical and a scientific course), and a teachers' course. In 1875—6 there were 10 instructors, 335 students (141 collegiate), and about 700 *alumni*. The presidents of the university have been as follows: the Rev. Edward Thomson, D. D., LL. D., 1844—60; the Rev. Frederick Merrick, M. A., 1860—73; the Rev. Lorenzo D. McCabe, D. D., LL. D. (acting), 1873—6; and the Rev. Charles H. Payne, D.D., LL. D., elected in 1876.

OLIVET COLLEGE, at Olivet, Mich., was founded in 1844. It is supported by tuition fees of from $15 to $21 a year, and the income of an endowment of $140,000. The library contains about 6,000 volumes. The institution comprises a collegiate department, with a classical, a scientific, and a *ladies'* course; and a preparatory department, with a classical, an English, and a *ladies'* course. Facilities are afforded for instruction in art, music, and normal school branches. In 1875—6, there were 14 instructors and 317 students (124 collegiate and 193 preparatory), of whom 151 were males and 166 females. The presidents of the college have been as follows: the Rev. M. W. Fairfield, 2 years; the Rev. N. J. Morrison, 8 years; the Rev. J. H. Hewitt (pro tem.), 2 years; the Rev. Oramel Hosford (pro tem.), 1 year; and the Rev. H. Q. Butterfield, D. D., the present incumbent (1876).

OLMSTED, Denison, a natural philosopher and educator, born in East Hartford, Ct., June 18., 1791; died in New Haven, May 13., 1859. He graduated at Yale College, and shortly after became a tutor there. In 1817, he was appointed professor of chemistry in the University of North Carolina; and, while in that position, he proposed and completed the first state geological survey ever made in the United States. In 1825, he was appointed professor of mathematics and natural philosophy in Yale College, with which institution he remained connected till his death. In 1830, he published a theory of hail-storms, which, after much discussion, was accepted as a valuable contribution to scientific knowledge. Three years later, he began an investigation into the cause of the shower of shooting-stars which occurred in 1833, and made such suggestions in regard to them as, followed up by astronomers in this country and in Europe, have led to a great addition to our knowledge of these singular bodies. Professor Olmsted, besides being a frequent contributor to scientific periodicals, has been the author of many text-books on natural science, the principal of which are: *Introduction to Natural Philosophy* (1831); *Compendium of Natural Philosophy* (1832); *Introduction to Astronomy* (1839); *Compendium of Astronomy* (1841); *Letters on Astronomy* (1841); and *Rudiments of Natural Philosophy and Astronomy* (1844).

ONE STUDY UNIVERSITY, at Scio, Harrison Co., Ohio, under Methodist Episcopal control, was opened in the fall of 1859, at Harlem Springs, Ohio, and was known as the Rural Seminary, which name it retained until 1867, when it was removed to New Market Station, and the name changed to New Market College. In 1874, the legislature changed the name of the village from New Market to Scio; and the name of the college was then changed to One Study University. The institution was chartered in 1866; and since then, 111 students have graduated. The distinctive feature of this institution is the *plan of study*. Each student passes through the course by taking up and thoroughly completing one study at a time. It is claimed that "a practical test of six years shows a great gain in scholarship, and a saving of about one-third of the usual time." Both sexes are admitted. There is a collegiate (classical and scientific), a preparatory, and a normal course. Facilities are afforded for musical instruction.

The cost of tuition in the classical and the scientific course is $12 per quarter, of twelve weeks. In 1874—5, there were 4 instructors and 119 students (82 collegiate, 8 preparatory, and 29 in music). Alfred D. Lee, A. M., has been the president from the opening of the university.

ONTARIO, the most populous province of the Dominion of Canada, having an area of 107,780 sq. m., and a population, according to the census of 1871, of 1,620,851, of whom 466,786 are Methodists; 356,442 Presbyterians; 330,995 Episcopalians; and 274,162 Roman Catholics. Originally a part of the old province of Quebec, it was, in 1791, organized as an independent province, under the name of Upper Canada. In 1841, it was reunited with Quebec; and, in 1867, it became a part of the Dominion of Canada under its present name.—The first settlers in Ontario were chiefly from England and Scotland; and, as most of them had received a good education at home, they were anxious to provide good schools for their children. As early as 1807, each of the eight districts into which the province was at that time divided, had its grammar school. In 1816, the legislative assembly passed the first law for the organization of primary instruction, and appropriated $6,000 for carrying it out. In 1823, Sir Peregrine Maitland obtained permission from the imperial government to establish a board of education for the province, with power to superintend the schools, and manage the university and school lands. In 1844, the Rev. Dr. Ryerson was appointed superintendent of schools; and, before entering upon his office, he visited Europe and the United States, and presented a report, in which he suggested the principles upon which the school system of the province was afterwards constructed. Dr. Ryerson has ever since remained at the head of the school system, the development of which is chiefly his work. In 1850, the comprehensive school bill, which was prepared by him, became a law; and, in 1853, an amendment act was passed making several improvements in the system. Separate Protestant and colored schools were now permitted, as well as Roman Catholic schools. A most important measure, making all the public schools free, and introducing compulsory education, was passed in 1871, and somewhat modified in 1874. The council of public instruction consists of the chief superintendent, or in his absence, of the deputy, eight members appointed by the crown, one member by each of the colleges having university powers, one by masters and teachers of high schools, one by the public-school inspectors, and one by the public and separate school-teachers. Each member holds office for two years, and is eligible to re-appointment. The council prescribes text-books for the normal, high, and public schools, and makes rules and regulations for their government. It has the appointment of the high-school inspectors, the central committee of examiners, and the teachers of the normal and model schools. It prescribes the qualification of, and grants certificates to, inspectors, examiners, and teachers, prescribes library and school books, and makes regulations for the superannuation of teachers, to whom pensions are granted. The chief superintendent is appointed by the lieutenant-governor. It is his duty to see that all moneys drawn from the provincial treasury are duly applied, and to have the general supervision of the schools. The county councils levy for teachers' salaries an amount equal to the chief superintendent's apportionment; and designate and pay the county's proportion of the salary of legally qualified inspectors, each of whom must have not more than 120 nor less than 50 schools. Where French or German is the language spoken, the inspector may have not less than 40 schools; if there are more than 50 schools, the county must have two or more inspectors. The council is empowered to fill a vacancy in the office of inspector, and to appoint not more than four persons, who, with the inspector, form a board for the examination of teachers. Township councils form school sections with not less than 50 children. The township councils are also empowered to establish township school boards, if two-thirds of the sections desire it, each board to consist of five trustees; to levy sums required for purchasing a township library, and for the support of a township model school, of which the councilors are the trustees. City, town, and village councils have the same powers and duties as county and township councils. For every school section, a board of three trustees is elected by the people. Inspectors are appointed by county councils, or by city or town school boards, and may be dismissed for misconduct by the lieutenant-governor, or by the county or town councils. All the public schools are free; the rural trustees and the municipal councils being required to levy the tax upon the taxable property, in order to defray the school expenses according as the trustees determine. No pupil can be compelled to join in any exercise of devotion or religious study objected to by the parents; but pupils may receive such religious instruction as their parents desire, subject to general regulations. The union of the high and public school boards of a city is called the Board of Education of that city, and this board possesses the same powers as the high and public school trustees. Parents neglecting to have their children between the ages of 7 and 12 years instructed for four months in the year, are liable to a penalty; but no Roman Catholic can be required to attend a public school, nor a Protestant, a Roman Catholic school. The clergy of any persuasion, or their representatives, may use the school-house to give religious instruction to the pupils of their own church, at least once a week, after 4 o'clock. The daily exercises must be opened by reading a portion of the Scripture, and by prayer; and the Ten Commandments must be taught to all the pupils, and be repeated at least once a week; but no pupil need be present at these exercises against the written request of his parents. The master of the school may suspend, or, with the consent of the trustees, may expel a pupil. All teachers are required to attend regularly the teachers' meetings; and any teacher may be absent two days every half year for the purpose of visiting other schools, and observing the methods practiced therein. The laws governing Roman Catholic separate schools are nearly the same as those of the public schools. A separate school may share in the provincial or municipal grants, but not in municipal assessments. The public or separate school board of any city may establish an industrial school for destitute, vagrant, and depraved children. The number of children between the ages of 5 and 16 years, in 1874, was 511,603; the number of schools, 4,758; the number of pupils, 464,047; and the number of teachers, 5,736. The amount expended from grants was $267,782; and the amount raised and expended from local sources, $2,597,550. The Roman Catholic separate schools, which are included in the above, were 166 in number, with 22,786 pupils.—By the law of 1871, the former grammar schools were changed into high schools. The course of study in these schools comprises the English language, arithmetic, algebra, geometry, natural philosophy, French, German, Latin, Greek, chemistry, botany, physiology, history, geography, bookkeeping, writing, drawing, and penmanship. The governor may confer on any high school, the name of collegiate institute, if four masters are fully employed, and an average of 60 male pupils in the classics is maintained; and such institute may receive an additional $750 per annum, while that standard is maintained. The number of high schools, in 1874, was 103, with 240 teachers, a total enrollment of 7,871 pupils, and an average attendance of 4,621. The expenditure, including a grant of $78,494, was $286,593. Besides the public schools, there were, in 1874, 280 collegiate and private schools, organized independently of the school laws, with about 8,500 pupils and 540 teachers. The University of Toronto was established, in 1827, as King's College. The institution was inaugurated, and the first students were admitted, in 1843. The university confers the degrees of Master of Arts, and Bachelor of Arts. Connected with the university there is a faculty of medicine and of law, a school of civil engineering, and a department of agriculture, each department conferring the usual degrees. The University College of Toronto was originally a part of the university; but was separated from it in 1853. By this act, the university became the examining body, also conferring degrees in arts, law, and medicine; and the college was constituted a teaching institution for the faculty of arts. The course of instruction prescribed by the university has been adopted by the college, and its lectures are given on the subjects appointed for candidates for the degree of B. A., or for the diplomas in civil engineering and agriculture. The University of Victoria is under the control of the Wesleyan Methodist Church. It was opened as an academy for both sexes, in 1836, and received the usual university powers, in 1841, and its present name. It has a faculty of arts, a scientific department, a faculty of medicine, a faculty of law, and a faculty of theology. It confers the usual degrees in each faculty. ¶ The Cobourg Collegiate School serves as a preparatory department for the university. Queen's University and College, in Kingston, was established by an act of the legislature of Upper Canada, in 1840, as the University of Kingston. This act was disallowed; and, in 1841, the queen issued her letters patent, incorporating the institution. The first session was opened in 1842, with 11 students. A faculty of medicine was organized in 1854, but became a separate school in 1866, under the name of the Royal College of Physicians and Surgeons. It has its seat in Kingston, and is connected with the university. The faculty of law which was opened in 1861, was discontinued in 1863. Since the opening of the college, 871 students have been enrolled, and 526 degrees have been conferred. The university is under the control of the Presbyterian Church. Trinity College was established by an act of the legislature in 1851, and was opened the same year. The University of Trinity College was established by a royal charter in 1852, and was empowered to confer degrees in divinity, arts, law, and medicine. Ottawa College, in Ottawa, was incorporated, and empowered to grant university degrees, in 1866. It is under the direction of the Oblate Fathers of Mary Immaculate. Albert University, in Belleville, was incorporated in 1857, as Belleville Seminary, by the Methodist Episcopal Church. It received limited university powers in 1866, and full powers, in 1871. It has faculties of arts, law, music, theology, and engineering, and a department of agriculture. There are, also, in the province a large number of professional and scientific schools. Institutions for the special instruction of the deaf and dumb, and the blind, for orphans, and for vagrants and young criminals are also provided. The number of Sunday-schools, in 1874, was about 3,500, with 197,000 scholars and 22,700 teachers. — See MARLING, *Canada Educational Yearbook and Directory for* 1876; LOVELL'S *Gazetteer of British North America*, (1873); CHAUVEAU (formerly minister of instruction in the province of Quebec), in SCHMID'S *Encyclopädie*, art. *Canada* (2d edit., 1876).

ORAL INSTRUCTION is a technical term in use in the common schools of the United States to denote instruction, without text-books, in the nature and uses of common objects, and also in the elements of natural science. In a certain sense, all instruction given by the teacher in the class room, either to supplement the text-book, or by way of general explanation, may be said to be oral; and, considered in this sense, it belongs to every subject taught. But oral instruction, as it appears in courses of study, is limited to a distinct channel of teaching, and, therefore, is not to be confounded with general class instruction in the entire range of subjects. It is distinct from object teaching, because it is not confined to teaching through sensible objects. It deals also with more advanced pupils—those, for example, who have passed through the lowest, or primary grades, and who may be supposed to have benefited by what is known as object teaching. It has to do, moreover, with elementary knowledge, and has been gradually narrowed to instruction in natural science. As might be gathered from the word *oral*, its leading or cardinal idea is instruction without a text-book. The teacher is in the place of the book. The information given flows entirely from him; and the skill with which he imparts this, is the measure of his success. Closely allied in importance to the foregoing, is the principle that the instruction shall be familiar. In its methods, it must approach closely those that are adopted in an intelligent family circle; it must emulate the kindliness, patience, and watchfulness of a parent, or of a deeply interested friend. With a clear idea as to the kind and amount of instruction to be given at each lesson, it must avoid mere amusement and puerilities, on the one hand, and the danger of a mechanical and hard method, on the other. The test of such familiar instruction is the interest which the teacher creates and maintains; the want of life and animation on the part of the pupils is an unfailing measure of the teacher's short-coming. But instruction to be familiar must be fertile in illustration. In no part of the teacher's work is there greater need of versatility. It is in this that the vast advantage of oral teaching over that which depends on the text-book is apparent. Pliancy, variety, suitableness to the particular wants of certain pupils, or of the class as a whole, simple familiar allusions and illustrations, all come into play. If experiments are necessary, they should be always of the simplest kind, and with the commonest materials, such as nearly every child can obtain, if he can be induced to imitate the experiments. So far as objects are needed, those that are easily obtainable are to be preferred. The approach to the pupil's mind through his senses is carefully to be kept open; most constantly of all, the avenue of sight, although, of course, the other senses are not to be neglected. As a natural result of this familiar instruction, the interest of the pupils will manifest itself in inquiries, and especially in a desire to communicate the glimmerings of their own knowledge. This will render the exercise still more familiar, break down the barrier of reserve on the part of the pupils, stimulate observation and thought throughout the class, and react on the mind of the teacher, compelling perhaps new illustrations, a more carefully considered statement, or fresh investigation outside of school. From what has been stated, it will be seen that oral instruction is widely separated from lecturing. The children are brought immediately in contact with the mind of the teacher, by means of skillful questioning on his part, by requiring from them connected statements, and by stimulating them with his approval when a happy answer or statement has been made. This method never loses sight of class instruction, and, therefore, cannot be carried on without the assistance of the class. Nor is it a recitation in the generally received acceptation of the word. There is no lesson to be learned in the sense implied by a recitation, nor any to be recited. The memory is of course taxed, but it is not taxed by any lesson to be committed as a task. The measure of the pupil's interest is the measure of his acquisition. Whatever he learns is in no sense compulsory. Skillful reviewing is, indeed, used to test the hold that the oral instruction has kept on the pupil, and to supplement what has been imparted, by new or more lively illustration. But repetition, in a mechanical or rote sense, as understood to be an underlying principle in text-book instruction, is not used in oral instruction. The subjects to which oral instruction, as a special method, is usually confined, are embraced, under the head of *natural science*. While it does not aim to make the instruction in these subjects scientific, it does aim to impart such instruction in a methodical way, and with the most careful accuracy. Wherever classification is necessary, such classification, naturally, becomes more or less scientific. Whenever definitions are necessary, they must approach scientific accuracy. But the scientific nomenclature, except in those cases in which it has passed into common use, is carefully avoided. Latin or Greek terms, therefore, being burdensome to the young, however instructive to the adult, are generally to be discarded, and familiar or common names to be used. As a thorough scientific classification is not the object of oral instruction, neither does it endeavor to make the treatment of the various subjects exhaustive. It has done much of its true work when it has awakened attention, strengthened observation, led the pupils to collect illustrative objects, taught them to group and arrange what they have observed, and implanted in them a tolerably clear idea of the simpler elements of the science, to which the instruction has been confined. It has done its full work when, in addition to this, it has accustomed the pupil to express, in his own language, what he has learned and retained, without the painful halting and poverty of language so often manifest in the class room. With some approach to scientific accuracy, oral instruction may be defined as the union of conceptive and objective training. It does not discard objective illustration, nor does it depend entirely on the development of perception to furnish new ideas. It proceeds on the principle, that, in the mind of every healthy child of eight years of age, there is a vast number of tolerably distinct conceptions, obtained through the senses, as well as from conversation, from reading, from home instruction, and from play; that these conceptions are particularly abundant in relation to natural objects; and that it is the office of the oral instructor to recognize their existence by using them to form more complex ideas, or as the nucleuses around which to arrange the new ideas imparted during instruction. As to the age when this instruction should be given, as well as its importance, the following words of President Porter, in the *Human Intellect*, may be cited. "The studies which should be first pursued are those which require and discipline the powers of observation and acquisition, and which involve imagination and memory, in contrast with those which demand severe efforts and trained habits of thought. Inasmuch also as material objects are apprehended and mastered in early life with far greater ease and success than the acts and states of the spirit, objective and material studies should have almost the exclusive precedence. The capacity of exact and discriminating perception, and of clear and retentive memory, should be developed as largely as possible. The imagination in all its forms should be directed and elevated—we do not say stimulated, because in the case of most children, its activity is never-tiring, whether they be at study, work, or play. We do not say, cultivate perception, memory and fancy, to the exclusion or repression of thought, for this is impossible. These powers, if exercised by human beings, must be interpenetrated by thought. If wisely cultivated by studies properly arranged, they will necessarily involve discrimination, comparison, and explanation. To teach pure observation, or the mastery of objects or words, without classification and interpretation, is to be ignorant even to simple stupidity." Further on, the same author, in speaking of the various studies to be prosecuted in childhood says, "Natural history in all its branches, as contrasted with the sciences of nature, or scientific physics, should be mastered with the objects before the eye—flowers, minerals, shells, birds, and beasts. These studies should all be mastered in the spring-time of life, when the tastes are simple, the heart is fresh, and the eye is sharp and clear. But science of every kind, whether of language, of nature, of the soul, or of God, *as science* should not be prematurely taught."—See *How to Teach* (N. Y., 1874); Barnard, *Oral Training Lessons in Natural Science* (N. Y., 1871); Youmans, *The Culture Demanded by Modern Life* (N. Y., 1867); Burton, *The Culture of the Observing Faculties* (N. Y., 1865).

ORDER, in school management, implies (1) the existence of a judicious system of regulations, and (2) a uniform and habitual observance of them by the pupils. It is one of the most important elements of a good school, since it enables the teacher to concentrate all its educative agencies without embarrassment or interruption. The characteristics of good order are (1) attention on the part of the pupils to the legitimate work of the school, (2) obedience and respect to teachers, (3) decorous deportment—the absence of tumult, rudeness, frivolity, and frolicsome actions, calculated to disturb the school, and (4) propriety and exactness in the school evolutions and drill. Order is the result of skill and tact on the part of the teacher; but it cannot be fully maintained unless he is vested with suitable authority, so as to be able to correct disorder, as soon as it manifests itself. General disorder in a school can result only from bad management, indicating incompetency on the part of the teacher. "If a school be well organized", says Wickersham, "its classes well arranged, its work well systematized; if pupils be properly employed in study, in recitation, in exercise; if school-government be well understood and wisely administered, a large proportion of the offenses which now occur in school will disappear."—(See Discipline, and Government.)

ORDER OF STUDIES. See Course of Instruction.

OREGON, one of the Pacific states of the American Union, originally a part of the territory of Oregon, which was organized in 1848, and comprised all the U. S. territory west of the Rocky mountains and north of the parallel of 42°. From this, the territory of Washington was formed, in 1853; and, in 1859, Oregon was admitted into the Union, as a state, with its present limits. Its area is 95,274 sq. m.; and its population, in 1870, was 90,923, of whom 346 were colored persons, 3,330 Chinese.

Educational History.—As early as 1850, while Oregon was yet a territory, its laws provided for the establishment of public schools; but the want of teachers, and the unsettled character of the population, made it difficult to organize any effective system. According to the census of 1850, there were in the territory 32 academies; a flourishing institute belonging to the Methodists, near Salem; and two female seminaries at Oregon City. A general recommendation in behalf of education was made by the first constitution of the state, adopted in 1859; and certain specified sources of revenue were assigned for the production of a permanent school fund. No state superintendent or board of education was, however, created, the governor being required to include the care of the schools with his other duties; but one of the sections provided that, after five years, it should be competent for the legislature to provide for the election of a superintendent. In 1872, a general school law was passed, which created the office of state superintendent of public instruction, and provided for the election of county superintendents and district directors. This law is still in force. The first superintendent was Sylvester C. Simpson, appointed, *ad interim*, by the governor, in 1873; and, in 1874, L. L. Rowland was elected to succeed him.

School System.—By the law of 1872, which went into effect in 1873, the *state board of education*, consisting of the governor, secretary of state, and state superintendent, is charged with the care of the public schools. It holds semi-annual meetings, at which it examines teachers, prescribes a course of study for the public schools, designates the text-books to be used, and lays down general rules for the management of the schools. The diplomas issued by the board are of two kinds, life and state—the latter valid for 6 years throughout the state. It also issues first and second grade certificates, valid for 2 years, and 6 months, respectively. The *state superintendent of public instruction* is elected by the people for 4 years, and is, *ex officio*, secretary of the board of education. He exercises a general supervision over the public schools and over subordinate officers; holds annually, at the capital, a state teachers' institute, and local institutes in the judicial districts; and makes a report to the legislature once in 2 years. *County superintendents* are elected biennially. Their duties are to divide their counties into school-districts; to establish new districts when directed by a majority of the legal voters; to apportion the school fund; to take charge of the school lands, selecting in each township the 16th and 36th sections; and to examine teachers, granting certificates graduated according to qualifications. They are, also, required to visit the schools under their jurisdiction, and to make annual reports to the state superintendent. Three *district directors* are elected, whose terms of office are 3 years, one director being chosen annually in each district. A *district clerk*, also, is annually elected, who acts as the executive officer of the board of directors. The permanent school fund consists of the proceeds of all lands granted to the state for educational purposes, except university lands; all money accruing to the state by escheat and forfeiture; all money for exemption from military services; all gifts, devises, and bequests made by any person to the state for common-school purposes; all the proceeds of the lands granted to the state by Congress, in 1841; and 5 per cent of the proceeds of the land to which the state was entitled on her admission into the Union. In 1875, this fund, derived mainly from the sale or rent of the 500,000 acres of lands given by the general government, amounted to $564,000, besides about $750,000 not then available. The income from this was, at that time, $56,400. The university land grant of 66,080 acres has, thus far, yielded about $100,000. The school revenue is further increased annually by a state 3 mill tax, by county and district taxes, by rate-bills, and by voluntary contributions. The legal school age is from 4 to 20 years; the school year, 60 days; the school week, 5 days. The course of study comprises orthography, reading, writing, mental and practical arithmetic, English grammar, geography, and modern history. In addition to these branches, which are obligatory, others may be taught, up to, but not including, training for college. In one of the schools, in every district of not less than 10,000 inhabitants, instruction is directed to be given in the German language, if applied for by 100 voters.

Educational Condition.—The whole number of schools in the state, in 1875, was 594, of which 4 were high schools, 31 were graded schools, and 559, ungraded. The income was as follows: from state tax, $30,273; from interest on the permanent fund, $56,400; total, $86,673 Other items of *school statistics* are the following:

Number of children of school age:		
males......	23,265	
females	21,396	
Total........................		44,661
Number of teachers in public schools:		
males......	496	
females....	457	
Total........................		953
Average duration of school, in days.........		105½
Average monthly salary of male teachers.....		$51.45
" " " " female "		$45.50
Estimated value of school property..........		$350,000

Normal Instruction.—Provision is made for the professional education of teachers by the Pacific University, Willamette University, and McMinnville College. In the first, a course of 2 years is provided, admission to which is granted after a satisfactory examination is passed in arithmetic, penmanship, reading, spelling, English grammar, geography, the history of the United States, and elementary algebra. A limited number of *teachers' institutes* have been held since the organization of the public-school system. The State Teachers' Institute held a meeting at Salem, in 1875.

Secondary Instruction.—Of the 4 high schools existing in 1874, the most important is that at Portland. Besides giving instruction in all the higher English branches, it affords opportunities for the study of Latin, Greek, French, and German. Its course of study extends over 3 years. Five private schools and academies exist in the state, and there are preparatory classes connected with nearly all of the colleges. The commercial department of Willamette University furnishes instruction to between 60 and 70 students in a single year's course, in this respect taking the place of the ordinary business college.

Denominational and Parochial Schools.—A few institutions of this class exist, the principal being the Portland Academy and Female Seminary (Methodist Episcopal), St. Mary's Academy for Young Ladies (Roman Catholic), and the Bishop Scott Grammar and Divinity School (Episcopal). In all these, the grade of instruction is secondary, or above; in one, the course extending as far as the third year of the college curriculum. The Chinese Mission School of Portland was established by the Baptists, in 1874. While imparting religious instruction, it also supports an evening school, in which music and the ordinary branches of an English education are taught.

Superior Instruction.—The colleges and universities are as follows:

NAME	Location	When founded	Denomination
Christian College........	Monmouth	1865	*Christian*
Corvallis College.........	Corvallis	1868	M. Ep. S.
McMinnville College....	McMinnville	1858	Baptist
Oregon State University..	Eugene City	1872	Non-sect.
Pacific Univ. and Tualatin Academy..............	Forest Grove	1854	Evang.
Philomath College.......	Philomath	1865	U. Breth.
Willamette University....	Salem	1853	M. Epis.

Of the above, the Oregon State University, though founded in 1872, had not, up to 1875, been opened; $25,000 yet remaining to be raised by the county, in order to entitle the regents to the use of the $60,000 already raised. In all the other institutions enumerated in the table, both sexes are admitted. St. Helen's Hall, Portland, is the only institution in the state for the higher education of women exclusively. The regular course of study occupies 5 years, but academic degrees are not conferred.

Professional and Scientific Instruction.—Corvallis State Agricultural College (q. v.), though founded by the Methodists, has received the congressional grant of 90,000 acres, and is the only institution in the state in which instruction in agriculture is given. Though still under sectarian control, it receives annually from the state an appropriation of $5,000. There is, also, a scientific department and a medical department in Willamette University.

Special Instruction.—The Institution for the Deaf and Dumb, at Salem, was founded in 1870, by an annual appropriation of $2,000 for 2 years. In 1873, a further appropriation of $4,500 was made, which was increased, in 1874, to $5,000. It had, in 1875, 3 instructors, and an average of 22 pupils. The Oregon School for the Education of the Blind was founded at Salem, in 1872, by an appropriation of $4,000. It was opened in 1873 with one instructor and 7 pupils. The following year, the legislature authorized an annual appropriation of $2,000 for its support. In addition to instruction in the elementary branches which are usually taught in common schools, special instruction is given in pin-type printing, music (vocal and instrumental), plain sewing, and fancy work.

ORPHAN ASYLUMS, or Orphan Houses, are institutions in which orphans are received and educated. Although some arrangements for the support of orphans are met with in the history of ancient Greece and Rome, and, to a much greater extent among the Hebrews, the establishment of special institutions for their care and education is due to the influence of Christianity. The first orphan houses (*orphanotrophia*) appear to have been founded in the time of Constantine I.; and the church law expressly placed them under the control of the clergy. In the 14th century, France had a confraternity whose chief object was the support of orphans. The number of special orphan institutions remained, however, comparatively small, until A. H. Francke (q. v.) excited a more general interest in their behalf, and gave a powerful impulse to their more rapid progress. Among the rulers of Europe, none gained so great a distinction for a kindly and active promotion of orphan education as the empress Maria Theresa of Austria. — The number of orphan asylums in the United States is very large, nearly every state being represented in the list. Girard College, in Philadelphia, is, in every respect, one of the foremost orphan houses of the world. Its founder, Stephen Girard (born in Bordeaux, France, in 1750; died in 1831, in Philadelphia), left by his last will $2,000,000 for the erection of an institution in which should be maintained and educated as many white male orphans as might be in need of such support. It was opened in 1848, with a class of 100 orphans, and, in 1875, contained 550; but, in that year, the erection of additional buildings had been resolved upon. The permanent income from the estate will support about 1,050 orphans. The large majority of orphan houses, both in the United States and in Europe, are charitable institutions, supported by endowments and voluntary contributions. Quite a number are maintained and controlled by each particular religious denomination, a noble rivalry existing among the churches of the civilized world, to provide in an efficient manner for their own orphans. Only quite recently have state and municipal governments begun to recognize the care of orphans as a duty, and to make appropriations for their education. Thus, there were, in 1874, in the United States, 21 soldiers' and sailors' orphans' homes, chiefly maintained by state appropriations.—It is natural to expect that, in a great many orphan houses, the instruction imparted would be inferior to that which children under the care of their parents usually receive at school and at home. In poorly endowed schools, the number of inmates is too large in proportion to that of the instructors and other *employés*; and, consequently, sufficient attention cannot be bestowed upon individual wants. It has been especially noticed that the too strict uniformity to which orphan children are usually subjected in their daily occupations, produces a lack of versatility and sprightliness, which, when they are dismissed from the asylums, prejudices employers against them. The hygienic condition of these institutions has also been found, in many instances, to be very unsatisfactory. As many orphans are the offspring of depraved parents, there is great danger from the admission of children of vicious habits. It has, therefore, been proposed to bring together only a small number of orphans (from 10 to 20) into a kind of family, and thus to furnish the best attainable substitute for a good home education. Others have recommended that orphans should be committed, for their education, to private families rather than to institutions. Experience, however, has shown that even these methods of providing for orphans are by no means devoid of danger. A full and interesting account of the orphan asylums in the United States is given in No. 6 of the *Circulars of Information of the U. S. Bureau of Education*, containing *Statements relating to Reformatory, Charitable, and Industrial Schools for the Young* (Washington, 1875). The early history of orphan houses is fully treated of by De Gérando, in his work *De la Bienfaisance Publique.* (See also Foundling Asylums, Industrial Schools, and Reform Schools.)

ORTHOGRAPHY, as a science, treats of the representation of spoken language by visible signs; it includes a systematic history of such signs, and a discussion of the principles according to which they should be made and used. Picture writing is first used; pictures of objects are used as signs of the names of the objects, then of initial syllables in such names, and finally of elementary sounds. The pictures, meantime, are abbreviated and modified to what we call letters. The essential principle of alphabetic writing is that a perfect alphabet must have one character for each elementary sound in the language, and only one. Subordinate rules are, that the characters should be easy to write and to distinguish, and shapely; like sounds should have like signs, and similar series of sounds should have analogous sets of signs; each character should be so shaped as to suggest, to some extent, the position of the organs of speech in forming the sound; derived alphabets are esteemed the better for embodying important history; all nations should use the same signs with similar values. No nation has ever made any near approach to a perfect alphabet. The growth from picture writing goes on without much guidance from ideas; and all the qualities which are merely matters of history and symmetry, are of little consequence in comparison with the essential principle of phonetic convenience. A good historical sketch of writing is to be found in Whitney's *Language and the Study of Language* (New York, 1867); see also Steinthal's *Die Entwickelung der Schrift* (Berlin, 1852). The Anglo-Saxon language was reduced to writing in Roman letters by the missionaries, who converted the people to Christianity, and gave them a pretty good alphabet. The letters were used in their Roman values, or nearly so, and new characters were added for the sounds of *a* in *fat*, *th* in *their*, (*dh*) *th* in *thine*, and *w*. After the Norman conquest, chaos came again with Anglo-Saxon, or rather English, spelling. A large part of the words of each race of the new people were difficult for the other to pronounce. The scholars inclined to spell in the old book fashion; but the Normans dropped the special Anglo-Saxon discriminations, and left many of their own letters standing which were not pronounced by the people; and many letters were inserted to no purpose in ill-directed attempts to represent the strange combinations. Then followed a change in the whole gamut, so to speak, of the vowel sounds. The close vowels changed under the accent into diphthongs by taking an *a* sound before them. The old *i* as in *machine* has thus changed to *ai*, as in *mine*; *u* as in *rule* has given rise to *au*, as in *house*. The open and mixed vowels have become closer: *a*, as in *far*, changing to *a* (*i. e.*, *e*) in *fate* or *wall*, or to *o* in *home* (A-S. *hâm*); *e* as in *they*, changing to *e* (*i. e.*, *i*) in *me*; *o* as in *foe*, changing to *oo* (*i. e.*, *u*) as in *moon* (A-S. *móna*). Single characters have thus come to stand for diphthongs, and the long and short sounds, which go in pairs in other languages, are denoted in ours by different characters, and come from different sources. Intermediate between the old *a* (*far*) and *e* (*met*) has become established *a* in *fat*, *fare*; between *a* (*far*) and *o* (*note*), *o* in *not* and *nor*, and the sounds of *u* in *but*, *burn*, have also arisen. All these have no special signs. Four consonants *sh*, *zh*, *th*, *dh* are in the same condition. The people have long since ceased to feel any necessity for keeping sounds and signs together. Changes go on without any record in the writing; etymologists slip in new silent letters, on the ground of imaginary derivations; old monsters, fertile in the popular fancy, propagate themselves in the congenial environment; and, altogether, we have attained the worst alphabetical spelling in the world. For the history of all these changes, see ELLIS'S *History of English Pronunciation* (London, 1867); SWEET'S *History of English Sounds* (London, 1874); HALDEMAN'S *Analytic Orthography* (Phila., 1858); MARCH'S *Anglo-Saxon Grammar* (N. Y., 1870); and the articles ANGLO-SAXON, and ENGLISH, THE STUDY OF, with the authorities there referred to.

Orthography, in a narrower sense, is the art of spelling correctly, according to the standard of a language. It first demands the attention of teachers as the art of inculcating the spelling of English according to the dictionaries of our language. In early times, there was no standard English spelling. The printers added or subtracted letters for convenience of spacing; the same word will be found spelt several different ways on the same page. Dr. Johnson's Dictionary (1755) was the first recognized standard. The common way of teaching spelling, is to teach from a spelling-book the form and name of each of the letters of the alphabet; then to practice on combinations of the letters in pairs, naming each letter and then uttering the sound of the combination; then to practice in the same way on combinations of three letters; then on words of two syllables, and so on. These syllables and words are selected with care; similar sounds are grouped together, and the groups arranged in a progressive order of difficulty in spelling-books. The first steps of this process may be made easier by using blocks with the letters on them for the learner to name and arrange into syllables; by setting him to write the letters on the slate, the paper, or on the blackboard; by adding pictures of the objects the names of which are spelt; or by the use of rhymes, and other contrivances of artificial memory. Another method is to begin with words as wholes, and, after some progress has been made in reading in that way, to direct attention to the separate letters, their names, and sounds (*word method*) Teachers proceeding in this way often name the letters by the sounds which they have in the word to be spelt, and not by their proper names. This is sometimes called the *phonic method*. Scholars are led on to more difficult words. Text-books of hard words, more or less classified, with rules for the most puzzling groups, are prepared, and blanks for written exercises in spelling. Some little help may be gained by rules, and mnemonic contrivances; but the standard spelling of our language is so irregular, that continual practice for many years is necessary to make any approach to the mastery of it. Among the most efficient helps to the teacher is the *spelling match*, for which sides are chosen which contend for the victory. It should be noted that continual practice in reading and writing is needed, or training to spell aloud in class will not save from mistakes in writing. Further, the most important words for each person are his own vocabulary,—the words which he uses in his own writing. Perfect accuracy in these is the end most to be desired in teaching. If this habit is once established, unusual words will be looked up, when the writer has occasion to use them. With all aids and arts, good spelling is one of the rare and costly accomplishments; and, naturally, stress is laid on it as the sign of a thoroughly educated person out of all proportion to its real value. It is made prominent in all civil service examinations and entrance examinations to colleges and universities. In the civil service examinations in England, out of 1,972 failures 1,866 candidates failed in spelling. But it is said that the documents prepared by the prime ministers of England show that no one of them could have passed these examinations in spelling. The best teachers in other respects often fail in spelling. English orthography is the opprobrium of English scholarship, and the greatest hinderance to education and to the spread of our language. Our children spend three years in learning to spell a little; while German children get further in a twelvemonth. There are about 5,500,000 illiterates in the United States. (See articles on ILLITERACY and PHONETICS.) Millions of dollars are spent every year in printing silent letters. Earnest efforts are now making for reform. The philological associations of England and America, teachers' associations, state and national, in England and America, and some state legislatures, have committees appointed on the subject. Several schemes of reform have been presented, the most important of which are those of A. J. Ellis and I. Pitman, E. Jones, A. M. Bell, and E. Leigh. Mr. Bell has invented a set of characters wholly unlike our present letters, which indicate by their form the position of the organs of speech. It can hardly come into speedy use in common books. Scholars have begun to use it somewhat in scientific treatises. (See BELL, *Visible Speech*, London, 1867.) Mr. Pitman has proposed an alphabet containing 16 new letters; and there is already quite a body of literature in that alphabet. He publishes a *Phonetic Journal*, having a circulation of 10,000 copies in various parts of the world. Charts for lecturers, and for school display, and other means of instruction adapted to it, are at hand. Dr. E. Leigh has combined a phonetic print, like Pitman's, with the standard spelling. (See LEIGH, *Pronouncing Orthography*, St. Louis, 1864, and his later publications in New York.) Elementary books for schools, printed according to his system, have been used for ten years in St. Louis, Washington, New York, Boston, and other cities, and are said to save much of the time usually spent in learning to read. Editions of most of the elementary books (primers, etc.) published in the United States are issued in Leigh's print. (See PHONETICS.) Mr. Ellis and Mr. Jones propose systems based on the present spelling, using always the same letters for each sound that are now oftenest used to denote it, as follows: (Mr. Jones's scheme) *a* as in *at*, *aa* (*father*), *ai* (*aid*), *au* (*taught*), *b*, *c* (*cat*), *ch* (*chip*), *d*, *e* (*met*), *ee* (*eel*), *f*, *g* (*go*), *h*, *i* (*in*), *ie* (*pie*), *j*, *l*, *m*, *n*, *ng* (*sing*), *o* (*on*), *oe* (*foe*), *oi* (*oil*), *oo* (*ooze*), *ou* (*out*), *p*, *r*, *s* (*sun*), *sh* (*ship*), *t*, *th* (*their*, *thine*), *u* (*bun*), *ue* (*hue*), *v*, *w*, *y*, *z* (*zeal*). This scheme is defective in giving the letters different values in combination from those which they have when alone, and in representing so many elementary sounds by digraphs. Besides, it does not serve to bring our spelling into harmony with other languages. Its advantage is, that it can be set up from common printer's cases, and that it can be read by any one who can read the old spelling. (See A. J. ELLIS, *Early English Pronunciation*, London, 1867; E. JONES, *A Revision of English Spelling a National Necessity*, London, 1875; E. B. BURNS, *Anglo-American Orthography*, New York, 1876).

According to the principles laid down by the American Philological Association, by the International Convention for the Reform of English Orthography, held in Philadelphia, August, 1876, and by the Spelling Reform Association, which are generally approved by scholars, the Roman alphabet is so widely used that it cannot be displaced, and the efforts of scholars in adapting it to English should be directed to using it with uniformity and in conformity with other nations. The letters now used in nearly their Roman sound are *a* (*fɑr*), *b*, *c* (*k*), *d*, *e* (*met*), *f*, *g* (*go*), *h*, *i* (*pick*), *l*, *m*, *n*, *o* (*note*), *p*, *q*, *r*, *s* (*so*), *t*, *u* (*rude*). To these it is agreed to add *v*, *w*, *y*, *z* with their commonest English power. Three new short vowels need signs, those in *fat*, *not*, *but*; for easy introduction, these should be slight modifications of *a*, *o*, *u*, such as for example a, ɵ, ʋ. The Romanic languages have heretofore used one sign for a short vowel and its corresponding long sound, adding a diacritical mark when great precision is needed. This would be acceptable in English for ɑ (ask, far), a (fat, fare), o (obey, note), ɵ (nɵt, nɵr), u (full, rude), ʋ (bʋt, bʋrn). For e (let, late) two characters are needed, a variation of *e* looking like *a* is of good promise; such as, for example, ɑ as in fɑte; i in pick, pique, perhaps may stand. For diphthongs there follow *ɑi* (by), *ɑu* (house), *ɵi* (nɵise), *iu* (music); but it is best to use for *ɑi* some modification of *i*, and for *iu* some modification of *u*, such as, for example, į, ų.

The consonants *sh* (as *s* in sugar), *zh* (as *s* in pleasure), *th* (as in thin), *dh* (as *th* in thine), *ng* (as in sing), and perhaps also *tsh* (as *ch* in church), *dzh* (as *dg* in judge) call for single signs; but the present notation will answer tolerably well, if carried out with uniformity, though scholars seek to revive the old signs for *th* and *dh*. Thus we have described a complete alphabet, such as the principles of the philologists would seem to call for.

A first step for teachers who favor this reform is to cease to use the old names of the letters which do not contain the sounds here given to the letters, and call them by names having those sounds; *e. g.*, *a* should be called *a*(*re*); *e* should be named as sounded in *met*, *c* as sounded in *can*. Then drop silent letters, and finally spell all words with these letters uniformly, according to their names.—See J. HADLEY, *Essays Philological and Critical* (N. Y.); W. D. WHITNEY, *Oriental and Linguistic Studies*, 2d series, (N. Y.); *Proceedings of the American Philological Association*, 1875, 1876; *Address to the American Philological Association, by the President*, F. A. March (Hartford, 1874); S. S. HALDEMAN, *Analytic Orthography* (Phila., 1858); *Proceedings of the International Convention for the Amendment of English Orthography* (Phila., 1876); *Proceedings of the Spelling Reform Association* (Phila. 1876); PITMAN'S *Phonetic Journal* (Bath, Eng.).

OSKALOOSA COLLEGE, at Oskaloosa, Iowa, founded in 1856, is under the control of the *Christian* denomination. The value of the buildings, grounds, and apparatus is $50,000; the amount of its productive funds, $30,000. It comprises a preparatory department, a collegiate department (with a classical course of four years and a *ladies' course* of three years), a Bible department, and a commercial department. Facilities are afforded for normal instruction, and for instruction in music, painting, and drawing. The cost of tuition is $30 a year. In 1874—5, there were 6 instructors and 200 students (deducting repetitions); namely, irregular, 106; collegiate, 16; preparatory, 34; Bible department, 14; commercial, 47. F. M. Bruner, A. M., is the president (1875).

OTTERBEIN UNIVERSITY, at Westerville, Ohio, founded in 1847, is under the control of the United Brethren in Christ. It is supported by tuition fees and the income of an endowment of $80,000. The tuition fee, including incidental expenses, is $24 a year. The university comprises a preparatory and a collegiate department, with a classical, a scientific, and a *ladies'* course. The last is especially designed for females who, however, are also admitted to the other courses. In 1874—5, there were 12 instructors, and 201 students (72 collegiate and 129 preparatory). The presidents have been as follows: William R. Griffith (principal), 1847—9; the Rev. William Davis, 1849—50; the Rev. Lewis Davis, 1850—57; the Rev. Alexander Owen, 1858—60; the Rev. Lewis Davis, D. D., 1860—71; the Rev. Daniel Eberly, A. M., 1871—2; and the Rev. H. A. Thompson, D. D., the present incumbent, appointed in 1872.

OWENS COLLEGE (Manchester, England) was founded by the bequest of Mr. John Owens, a merchant of Manchester, who, at his death in 1846, bequeathed the bulk of his property, amounting to nearly £100,000, to trustees to found an institution for teaching such branches of learning and science as were or might afterwards be taught in the English universities. After extensive inquiries, a college was founded and opened in 1851, which, like University College, London, was to be in connection with the London University, and was to be absolutely free from any religious disqualification. The terms of the original bequest allowed no portion of the endowment to be expended on land or buildings. Accordingly, in the earlier years of the college, £24,000 was contributed by the trustees and the people of Manchester in aid of Mr. Owens's bequest and for the foundation of scholarships. The home of the college, for twenty-two years, was in a large building in Quay St., which had formerly been a private house. But, in 1867, the old buildings had become inadequate; and an influential committee was formed to prepare a scheme for the erection of new buildings in a better part of the city, also for the endowment of new professorships, and to make an appeal for the necessary funds. The response, in contributions and legacies, down to July 1876, was the sum of £211,000, contributed partly for special, and partly for general, purposes. In addition to this, Mr. Beyer's recent legacy will probably yield £100,000 more. The new college was opened in 1873; and, including the site and the chemical laboratory, which has room for more than 100 students, it cost above £100,000, and when completed will cost £50,000 or £60,000 more. A further sum of £15,000 was expended upon the adjoining buildings of the medical school, previously known as the Manchester Royal School of Medicine, which was now, for the first time, united with the college. According to the new constitution of the college, the governors are 42 in number. Fourteen of them form an executive committee, called the council, which transacts the external business of the college, while the senate, *i. e.*, the body of professors, transacts its internal or academic business.

The college began with six professors, several allied subjects being assigned to one chair. There are now, 20 professors, and 22 assistants, in arts, science, law, and medicine. The professorships are endowed: one important result of this is that it is possible to charge lower fees, and to bring the benefits of the college within the reach of much larger numbers. The more important chairs have an endowment generally of £350 a year, to which a large proportion of the fees is added. In 1852, evening classes were begun for the sake originally of school-masters; but afterwards of all who chose to come. The Working Men's College in Manchester was incorporated with these evening classes in 1861, and the result was a large increase in the number of students. These students, in the session ending in May, 1875, numbered 863, including 35 who were also students in the day classes. In the same session, there were 375 day students with 159 medical students, making a total of 1,362. There are many valuable scholarships and exhibitions in connection with the college. The Rumney and Ramsbottom scholarships, with five Whitworth exhibitions, were founded with the design of enabling young artisans to pursue scientific studies at the college for two or three years. In 1872—3, the income of the college, out of which it defrayed its general expenditure, was about £11,000, of which £6,000 was derived from endowments, and £5,000 from students' fees. This does not include the medical department. It may be added that a proposal for erecting Owens College into a university has been widely discussed this year (1876), and has met with considerable approval.

The first principal of the college was the late Prof. A. J. Scott; the second and present principal is Prof. J. G. Greenwood. Students live outside the college, and for the most part make their own arrangements as to residence.—See *The Calendar* of the college; *Fifth Report of the Royal Commission on Scientific Instruction* (1874) *with the Minutes of Evidence;* Letter by Principal Greenwood in the *Athenæum* for April 10., 1875.

OXFORD, University of, one of the two great universities of England. Legend ascribes its origin to Alfred the Great, and University College claims to date from A. D. 872; but of this we have no proof. Oxford first became famous as a school of learning in the reign of Stephen, about 1140. From John it won its earliest charters; and, under his successor, the number of students is said to have risen to 30,000 (though this included many attendants and menials); at the end of the 14th century, it had fallen to 15,000; after the Reformation, to 5,000; it is now about 2,500. This popularity in the earliest times was due mainly to the influence of individual teachers. Famous men, like Grosseteste, Roger Bacon, Duns Scotus, and Occam, attracted students, who came from the universities of Paris and Bologna to attend lectures at Oxford. Each teacher lived in a hall, or inn, with his students, for colleges did not yet exist. The only endowed teachers were the monks. But the rule that every student should reside in a recognized boarding-house, and the example of University, Merton, and Balliol colleges, all incorporated toward the end of the 13th century, gradually effected the extinction of the halls, and brought about the present college system. The old chronicles tell us of the division of the students into *nations*— North and South, of the quarrels between them even on such questions as Nominalism *versus* Realism, of their electing proctors to protect their privileges against the chancellor, of their long feud and many riots with the citizens, and of the chancellor's summoning the citizens in arms to keep the peace, thereby often adding fuel to the flames. In 1209, we read of a riot so serious that the University incurred papal excommunication, and was forced, with the king, to accept the pope's terms; and, after another great tumult, subsequent to the Black Death, town and university both put themselves into the king's hands to settle their differences, the settlement made being greatly in favor of the latter. Although, during the barons' war, in Henry the Third's reign, and in the Lollard movement, under Edward III. and Richard II., Oxford had shown popular sympathies, yet in the next century it became decidedly ecclesiastical, and for some time the lay element played but a small part in it. With the revival of learning, came the fresh stimulus of Fox's, Wolsey's, and Henry the Eighth's patronage; and ten out of the twenty colleges, as well as all the professorships, date from 1500, or later. The principles of the Reformation were to be carried out by a commission sent down to Oxford by Edward VI., but the quick succession of Mary prevented this; and we find evidence of the Catholic reaction in the foundation of Trinity (1554), and St. John's (1555). Under Queen Elizabeth, Protestantism was definitely established (1571), the statutes of 1549 being enforced; but very little change occurred except in the matter of religion. Even the old rule of enjoining celibacy on the fellows was retained. The last contest between the *nations* took place in this reign, in the election of Leicester's successor to the chancellorship. James I. granted the parliamentary franchise to the universities in 1606, and divided between them such church patronage as was still in the hands of Catholics, Oxford taking the south of England, Cambridge the north; and, in 1617, he made adhesion to the Thirty-nine Articles of the Church of England a necessary qualification for the degree, which was afterwards extended to the matriculation. In 1628, the election of proctors was taken out of the hands of the masters, and given to the colleges in turn; and, in 1638, something like a real examination for degrees was introduced in place of the merely formal disputations. In the civil wars, Oxford sided with Charles I., and consequently suffered from Cromwell, though only slightly. To Charles II, she was heartily loyal, but even the firmest belief in "passive obedience" was shaken by his brother's measures. Nevertheless though William was generally welcomed as a savior of society, very many of the fellows continued friendly to the old dynasty, and talked Jacobitism against the Hanoverians.

In considering the actual state and working of the University nowadays, we must carefully distinguish between it and the colleges. The latter are corporate bodies consisting of fellows and scholars, possessing property and a building—the college proper—where they and the unendowed students reside. The University, while technically described as consisting of the "chancellor, masters, and scholars", consists practically of certain fellows and heads of colleges who fill various public posts, and administer public trusts. Within their own walls, the members of a college are independent, the fellows carrying out the services, lectures, and organization generally; outside the university, officers intervene, whether the proctors to enforce public order, the professors to give public instruction, or the examiners to test candidates for degrees, and the vice-chancellor to confer them. To qualify for these. a student must reside in a college or licensed lodging-house 12 terms, *i. e.*, three academic years of 6 months each, and must pass three examinations,— Responsions, Moderations, and Final Schools. The first is the same for every candidate; in the latter two, however, he has a choice of either taking a pass degree, or going in for "honors" in one or more subjects. The Honors Schools in Moderations are only classical and mathematical; but, in the Final, a choice is offered between classics, mathematics, law, history, natural science, and theology. As the competition in these subjects is strong, and as the result influences greatly a man's chances of getting a fellowship, most candidates defer their final examination until their 16th or 18th term, the latter being the latest allowed.

Fellowships are given upon examination. to be held either indefinitely, or only if the holder become a clergyman, and if, in either case. be remain a bachelor. Some few have, of late years, been granted (or renewed) to married men. Their value varies from £200 to £300 per annum; but a resident fellow is generally a tutor also, and for that receives a proportion of the tuition fees paid by the students. The average total is then from £600 to £800. The fellows manage the affairs of the college entirely; one of their number is elected head—known by various titles at different places, as rector, provost, master, president, or the like—and he is allowed to marry. These are all said to be "in the foundation", as are also the scholars—with incomes of from £20 to £100, granted by the college, and tenable 4 or 5 years —and the exhibitioners, or holders of inferior scholarships. Many colleges offer very valuable rewards of this kind; and many large schools throughout the country confer similar scholarships to last during a similar period. Such assistance, of course, materially lessens a student's expenses, which, on the average, may be reckoned at £200 to £250 a year. A less sum, however, will suffice, and frequently does; as is shown by the reported expenditure (£60 or even less) of several "unattached" students, that is, those who attend lectures as members of the university, but live always in lodgings, and are members of no college. Such students were first admitted in 1868, specially to diminish the expense of acquiring a degree. Their numbers have steadily increased; and the object of their institution—economy—is certainly gained. There are, also, many scholarships offered by the university, in contradistinction to the colleges, which are open to all under-graduates, and some of which are of considerable value. The most important of these are the Ireland, Hertford, Craven, and Derby, for classical excellence; the Junior and Senior mathematical, in their own province; the Boden in Sanskrit; the Radcliffe Travelling Fellowship and the Burdett-Coutts scholarship, in science; the Pusey and Ellerton, and the Hall and Houghton, in divinity. Special prizes are given for essays in certain subjects; and one, for poetry. The university, besides the award of these honors, has also the charge of all public examinations, of which it fixes both the manner and the matter, appointing the examiners and regulating the standard of knowledge. Within the last few years, it has exercised its powers in creating separate schools—or examinations—for law and history (previously united) and for theology. It elects and defines the duties of the professors, and its own officers. For the former, the oldest foundations date from Henry VIII., who instituted the professorship of Divinity, Civil Law, Medicine, Hebrew, and Greek. Before his time there was only one—the Lady Margaret Divinity (1502); between 1619 and 1624, five others were endowed, and the rest are of later origin. *Readers* are also appointed in several subjects, and for modern languages *teachers*, who hold a somewhat less dignified position. The whole number of public instructors is 50. Their lectures are, in some cases, free; in most, a small fee is charged; and, though but few command large audiences, their teaching not being supposed to "pay" for the examinations, almost all give valuable assistance to the more thoughtful and industrious students.—Of the university officers, it will be sufficient to mention the chancellor, the high steward, the vice-chancellor, and the proctors. The first was, in old times, the ruling head of the University; he was the nominee of the Bishop of Lincoln, and the guardian of his rights and privileges. Gradually, the nomination fell into the hands of the masters, the ratification only resting with the bishop, till, in 1338, that too was taken away by a papal bull. At present, he is little more than an ornamental appendage; the practical duties of his office being discharged by the vice-chancellor, who is nominated annually by the chancellor from the heads of colleges, and holds office generally for a term of four years; under him are four pro-vice-chancellors. He is the resident head of the university, and presides in all its meetings; and, being invested with the powers of a justice of the peace, possesses civil and criminal jurisdiction over its members. The proctors rank next in importance. These are two in number, fellows of colleges, elected according to a cycle of rotation, for one year only. Their business is to maintain discipline among the students outside their college walls, to appoint public examiners, and to attend meetings of the authorities; and, *ex officio*, they are members of most boards of management for university property and trusts. The high steward —who was once elected for his local influence and power to protect the university—is now of somewhat less importance than the chancellor, his only duty being to try serious criminal cases, such as treason or felony. The present (1876) high steward is the Earl of Carnarvon; the chancellor, the Marquis of Salisbury. The representatives in the Commons are the Rt. Hon. Gathorne Hardy, secretary for war, and the Rt. Hon. John Mowbray, both elected by Convocation. The assemblies governing—or, we might almost say, forming—the University, are four: (1) The House of Congregation; (2) The House of Convocation; (3) The Congregation of the University of Oxford; and (4) The Hebdomadal Council, constituted according to the act of 1854. (1) *Congregation* consists of Regents (*i. e.*, Masters of Arts of a certain standing) of all kinds, and merely ratifies the nomination of examiners, and the ordinary degrees. (2) *Convocation* consists of Regents and Non-Regents (*i. e.* all admitted to Regency, who have kept their names on the college books). It transacts all the other corporate business of the university, grants moneys, sanctions statutes, elects to all university offices and livings, and chooses the burgesses for parliament. In this assembly, the vice-chancellor (or his deputy) has the right of veto on all proceedings save elections; as have also the proctors if agreed. (3) The *Congregation of the University* embraces certain officials, and all members of Convocation residing in Oxford during the year. Its business is legislative, the statutes of the Hebdomadal Council being promulgated in it, and amendments proposed, which, if allowed, are passed on to Convocation for approval or rejection. (4) Lastly, we come to the *Hebdomadal Council*, in which sit the chancellor, vice-chancellor and proctors, *ex officio*, as well as 6 Heads of Colleges, 6 Professors, and 6 members of Convocation, elected for a term of 6 years by the Congregation of the University. This assembly meets weekly, and initiates all legislation.

About twenty years ago, the two universities started schemes for the examination of boys — under the name of the middle-class local examinations. In the Junior Group, candidates were to be under 16, in the Senior, under 18 years of age; every thing was conducted by nominees of the university; perfect impartiality and a high standard of merit were secured; and the examinations soon became popular. Scholarships are offered at three colleges in Oxford to the most distinguished of the senior candidates. Such a test has doubtless been of great service in improving the teaching in middle-class schools, and in calling forth the emulation both of masters and boys; but it has brought with it the apparently inevitable result of "cramming" and overworking boys of promise. It has lately been extended to girls, by Cambridge and also by Oxford. The latter university is behindhand, however, in that it has not yet supplied any thing analogous to the Cambridge higher examinations for women (over 18 years of age), and to the lectures given by *Cantabs* in support of university extension throughout the kingdom; but, at Oxford itself, there has, probably, never been a period when teaching was more careful and effective, or study more earnest, and its results more highly prized, than to-day.

The names of the colleges with the dates of their foundation are as follows: University, A.D. 872 (?), incorporated in 1280, from funds left, in 1249, by Wm. de Durham for 12 poor masters from Durham; Balliol, 1263—8; Merton, founded in 1264, at Maldon, removed to Oxford in 1274; Exeter, 1314; Oriel, 1326; Queen's, 1340; New, 1386; Lincoln, 1427; All Souls, 1437; Magdalen, 1458; Brasenose, 1509; Corpus Christi, 1516; Christ Church, 1546—7; Trinity, 1554; St. John's, 1555; Jesus, 1571; Wadham, 1609; Pembroke, 1624; Worcester, 1714; Keble, 1870; Hertford, 1874. The Halls are: St. Mary's, 1333; New Inn, used as a mint under Charles I.; St. Alban's; and St. Edmund's, the last as an adjunct of Queen's College. Of the colleges, the largest and richest is Christ Church, begun by Wolsey under the name of Cardinal College; completed and endowed by Henry VIII.; its under-graduates number 249; those at Baliol, 182. The most complete is New College, which has, as its nursery, Winchester School, founded by the same munificent patron, Wm. of Wykeham, and proportionately endowed. New College and Magdalen are both famous for their handsome chapels and grounds. The total number of undergraduates in the calendar for 1876 is 2,542, of whom 213 are unattached (to any college or hall). The number of matriculations was, in the last academic year, 718; of conferred degrees: Bachelors', 3,941, and Masters', 254. The revenue of colleges and university together is £420,000. — Besides the above collegiate buildings, there are others of great interest, also belonging to the university. The oldest is the Divinity School, opened in 1480, and now used chiefly for conferring degrees. Close to it are the schools (1611 seq.), in which examinations are conducted; and the Sheldonian Theater (built by Abp. Sheldon from the designs of Wren, in 1683), in which honorary degrees are given and prize compositions read, at the annual commemoration. The Bodleian library was founded, in 1597, by Sir Thomas Bodley, in place of the small library, which had been scattered at the Reformation. Bodley bought largely for it during the Thirty Years' War; but its usefulness dates from James I. Connected with it as a reading-room, is the library built by Dr. Radcliffe, founder also of the Infirmary and the Observatory. The Ashmolean museum (1632) is the property of the university, which has also its own press. Founded about 1672, it was extended in 1714, chiefly through the profits of Lord Clarendon's *History of the Civil Wars*, the copyright of which he presented to the university. It was removed to new buildings in 1833, and is now a very large establishment, distinguished by the chancellor's name. The most recent building of importance is the new museum, elaborately furnished with scientific collections and apparatus. The Taylorian Institute, also, is of late date; it contains a picture gallery and has an endowment for encouraging the study of modern languages. Among the under-graduates themselves, there are many private clubs; but the only one of these possessing buildings of its own is the Union Club, which, besides the ordinary appliances of a club-house, has a large debating-room, in which the members meet for weekly discussions, during term. —See HUBER, *English Universities*, translated and edited by F. W. NEWMAN; *Oxford Calendar and Ten Year Book; The Student's Handbook to the University and Colleges of Oxford* (Clarendon Press, Oxford).

PACIFIC, University of the, at Santa Clara, Cal., under Methodist Episcopal control, was organized in 1851, and chartered in 1853. It admits both sexes. It has productive funds to the amount of $40,000, libraries containing about 2,000 volumes. The cost of tuition varies from $8 to $20 per term of 14 weeks, with modern languages. The collegiate department has three courses: classical, 4 years; Latin scientific, 3 years; and scientific, 3 years. There is also a preparatory and a commercial department. In 1875—6, there were 10 instructors and 212 students (69 collegiate and 143 preparatory). The Rev. A. S. Gibbons, A. M., M. D., is (1876) the president.

PACIFIC METHODIST COLLEGE was organized in 1861, at Vacaville, Solano Co., Cal.;

chartered in 1862; and removed to Santa Rosa, Sonoma Co., in 1870. It is under the control of the Methodist Episcopal Church, South. Candidates for a degree have the choice of four courses of study. Two are for males—one in letters, and one in science; two are for females—a special course in letters, and a special course in science. Females may also pursue the two former courses. The college has a preparatory department, and affords instruction in pedagogics, painting and drawing, music, and commercial branches. The regular tuition fees vary from $30—$70 per year. In 1874—75, there were 9 instructors and 276 students, of whom 59 were of the collegiate grade. The presidents have been A. L. Fitzgerald, A. M., from 1870—76, and Rev. W. A. Finlay, D.D., since 1876,

PACIFIC UNIVERSITY, at Forest Grove, Oregon, chartered in 1853—4, is under evangelical, but not denominational, control. Connected with it is the Tualatin Academy, chartered in 1849. It has an endowment of about $65,000, and a library of 5,000 volumes. The university has four courses; namely, classical, 4 years, leading to the degree of A. B.; scientific, 3 years, leading to the degree of B. S.; *ladies'* course, 3 years, leading to the degree of M. S. (Mistress of Science); and normal, 2 years. The cost of tuition in these courses is $45 per year; in the academy, $30. In 1875—6, there were 8 instructors, and 118 students (13 collegiate and 105 academic).

PAGE, David Perkins, one of the most useful and eminent of American educators, born at Epping, N. H., July 4., 1810; died at Albany, N. Y., Jan. 1., 1848. The first part of his life was spent in agricultural labor on his father's farm; and it was not until his sixteenth year that he was permitted to enjoy the advantages of any thing beyond an elementary education. In 1826, he entered Hampton Academy, where he spent two terms preparing for the vocation to which he afterwards devoted his life. His first service as a teacher was in the district schools, from which, in a short time, he became associate principal of the Newburyport High School, in which he remained 12 years. He distinguished himself also as a member of the Essex County Teachers' Association, before which he delivered several lectures that elicited the highest encomiums from Horace Mann and others. One of these, on *The Mutual Duties of Parents and Teachers*, was especially admired, more than 6,000 copies being printed and distributed. As a speaker, Mr. Page was fluent and impressive. "He possessed," says Horace Mann, "that rare quality, so indispensable to an orator, the power to think, standing on his feet, and before folks." "As a teacher," says Barnard, "he exhibited two valuable qualifications,—the ability to turn the attention of his pupils to the principles which explain facts, and in such a way that they could see clearly the connection; and the talent for reading the character of his scholars, so accurately, that he could at once discern what were their governing passions and tendencies—what in them needed encouragement, and what repression." In 1844, preparations were making to open the state normal school at Albany, N. Y.; and on the recommendation of Horace Mann and others, in Massachusetts, Mr. Page was invited to assume its principalship, which he did the following year. The school commenced with 25 pupils; but, before the close of the first term, the number had increased to 100; and, at the commencement of the second term, there were 200 students. Numerous obstacles, incident to every experiment, such as this was at that time, opposed its progress; but the indefatigable energies, consummate ability, and devoted spirit of its principal overcame them all; and every new term increased the popularity and success of the school. Mr. Page's incessant labors, however, had exhausted his vital energies; and at the close of December, 1847, he was attacked with violent fever, from which he did not recover. Few men have possessed that rare assemblage of moral and intellectual qualities which made him truly a model teacher. "Of the hundreds of teachers," says his biographer, "who were under his care at Albany, there was not one who did not look up to him with admiration and love; not one who did not bear, to some extent at least, the impress of his character and influence." His *Theory and Practice of Teaching*, originally published in 1847, has been universally admired, and has had a very wide circulation.—See Barnard, *American Teachers and Educators* (N. Y., 1861).

PALÆONTOLOGY. See Geology.

PALATINATE COLLEGE, near the village of Myerstown, Lebanon Co., Pa., founded in 1868, is under the control of the Reformed Church. It has a commodious building situated on high ground, amid fine scenery. The institution comprises an elementary, an academic, a collegiate, and a musical department. Both sexes are admitted. In 1874—5, there were 7 instructors and 208 students. The Rev. George W. Aughinbaugh, D. D., is (1876) the president.

PARAGUAY, a republic of South America; area 56,715 sq. m.; population, about 221,000. The inhabitants are chiefly Indians, the Guarani language being dominant throughout the republic, although Spanish is the official language. The Roman Catholic is the prevailing religion. Paraguay was discovered by Sebastian Cabot, in 1530. It remained a part of the Spanish dominions until 1811, when it declared its independence. The early history of Paraguay presents one of the most remarkable attempts ever made to educate a barbarous nation. After missionaries of other orders had been unsuccessful among the Guaranis, the Jesuits entered the country, in 1557, and met with wonderful success. They collected the Indians in villages, which they called *reductions*, and enlisted their sympathies, by opening to them profitable sources of employment, chiefly by extending the commerce with *mate*, the so-called Paraguay tea. At the same time they strictly forbade them to hold any intercourse with the Spanish colonists, and obtained from Philip III. a mandate forbidding every body from entering their *reductions* without their permission. After these measures had been firmly established, they began with a strong hand to put their plans into execution. Every *reduction* received two missionaries, one for religious and the other for secular affairs. Every village was built in the same style, having in the center a large square, fronting on which were the church and the school-house. The streets were wide and regular. Every luxury, both in dress and habitation, was strictly prohibited; but the churches were decorated with gold and silver. The Jesuits administered all property belonging to the villages, and governed by means of the native *caziques*, who, although chosen by the inhabitants, were entirely dependent on the fathers. The slightest infractions of the law were severely punished. The instruction given by them consisted in teaching to read and write, and to recite the catechism; but, owing to their seclusion from the outer world, their acquirements availed them but little. Edgar Quinet, one of the most bitter opponents of the Jesuits, recognized that this method of education, "which would have destroyed older nations, was admirably adapted to a kind of grown-up children like the Guaranis"; but, at the same time, he adds that "it showed an unsurpassed ability to attract these children by granting them every thing, but what would have rendered them men." As their power increased, the fathers grew more independent, and finally broke off all connection with the home government. In 1767, a royal decree ordered their expulsion from the three provinces of Buenos Ayres, Rio de la Plata, and Tucuman, to which they offered no resistance. Their *reductions* gradually disappeared, while the Indians relapsed into barbarism. Under the dictator Francia (1814—1840), who practiced the same policy of seclusion that the Jesuit fathers had previously adopted, and under Lopez, schools were founded, and education generally, though slowly, advanced; so that, in 1861, Paraguay had as many primary schools in proportion to her population, as any of the other South American states. But during the disastrous war that followed, education was entirely neglected. Since 1870, determined efforts have been made to extend the benefits of instruction. The amount appropriated for schools, in 1874, was $34,860. The capital, Asuncion, formerly, had a *colegio*, which was founded in 1783, and in which, among others, candidates for the priesthood were educated. Lopez founded a gymnasium under the name *Academia Literaria;* but the course of instruction embraced only two subjects, Latin and philosophy. Subsequently other subjects, as mathematics, law, and theology were added. It was re-organized under the name *Instituto de Enseñanza;* the establishment of several colleges in provincial towns was resolved upon, and a number of young men were sent to France to be educated as professors.—See LE ROY, in SCHMID'S *Encyclopädie*, art. *Südamerica*.

PARENTAL EDUCATION.—See HOME EDUCATION.

PAROCHIAL SCHOOL, an elementary school which is united with a parish, and under the control of its pastor. Schools of this kind arose early in the middle ages. Although the mass of the people did not yet appreciate the value of school instruction, the popes repeatedly urged the erection of parish schools in connection with the churches. Teachers of Holy Writ, and instructors in ecclesiastical obligations, were, in particular, to be appointed in all parishes; for it was not conceived that any person could profitably take part in divine service, if he had not received proper instruction. In France, bishop Theodulph of Orleans admonished the parish priests to instruct the boys gratuitously in science. Charlemagne decreed that youths should be educated in reading, singing, arithmetic, grammar, and writing. A synod held at Mayence, before the middle of the 9th century, enjoined that the children be sent either to the convent or to the parochial school, in order to learn, at least, the creed and the Lord's Prayer in the native tongue.—For many centuries, the elementary schools grew and developed in close connection with the church. The Reformation did not change this relation; and, in Protestant as well as in Catholic countries, the common school continued to be a parochial school. More recently, in most countries, state authorities have assumed the chief control of the common schools; and the parochial character of such institutions has more or less disappeared; although many governments still delegate to the pastors of the established churches certain rights of inspection, and maintain separate schools for different denominations. In the United States, the name parochial schools is now generally applied to Roman Catholic and to Episcopalian schools which have been organized in close connection with the parishes; because, in the opinion of their founders, all elementary schools should provide religious as well as secular instruction, and should, therefore, have a strictly denominational character. (See DENOMINATIONAL SCHOOLS.)

PARSONS COLLEGE, at Fairfield, Iowa, founded in 1855, is under Presbyterian control. It has a campus of 20 acres, 2 handsome and commodious brick buildings, philosophical and chemical apparatus, and a library of about 700 volumes. Its productive funds amount to $24,000, nearly. There is an academic department, with a preparatory and a normal course, and a collegiate department, with a classical (4 years), and a scientific (3 years) course. The cost of tuition is $30 a year in the academic, and $36 in the collegiate department. Both sexes are admitted. In 1875—6, there were 6 instructors and 63 students (1 collegiate and 62 academic).

PASSOW, Franz Ludwig Karl Friedrich, one of the foremost representatives of lexicographic literature, born in Ludwigslust, Germany, Sept. 20., 1786; died in Breslau, March 11., 1833. He became, in 1807, professor at the gymnasium of Weimar, in 1810, director of the *Conradinum* of Jenkau, near Dantzic, and in 1815, professor at the university of Breslau. He was an enthusiastic admirer of Greek culture, and not only preferred the Greek language and literature to the Latin, but made a practical attempt, in the school of Jenkau, to have the study of Greek begun before that of Latin. His fame chiefly rests on his Greek lexicon, which not only began an entirely new era in the history of classical dictionaries, but is generally regarded as one of the most remarkable productions in the entire range of lexical literature. The first edition of the work (*Handwörterbuch der griechischen Sprache*, 2 vols., Leips., 1819—24), appeared as a revision of the Greek-German lexicon of Schneider; but, in the following editions, it was so completely rewritten by him, that the 4th edition (1831) bore only his name on the title page. Passow's work constitutes the basis of the Greek-English lexicon of Liddell and Scott. (See GREEK LANGUAGE.) The Prussian minister of education, A. Falk, (q. v.), is a son-in-law of Passow.

PATIENCE, the calm endurance of necessary toil or suffering. This quality, though similar to perseverance in the prolonged effort which its exercise presupposes, differs from it chiefly in the equable temper with which that effort is made. A patient spirit is one of the most important elements in the character of a successful educator. Many occasions, indeed, will occur, when patience will be the only virtue which will command success. Its cultivation, therefore, is desirable both on this account, and because of its value in mental discipline. Its possession, moreover, is necessary both to the teacher and to the pupil. To the former, it is of special use in his treatment of the varying dispositions with which he has to deal. The provocations to impatience and ill temper are so many and so constant, that, without patience, the teacher's life will be a continued series of annoyances. Impatience in children is the result either of temperament or hereditary predisposition; and, in dealing with it, the teacher should remember that nothing so tends to develop and foster it in his pupils, as a constant practical exhibition of it in his daily intercourse with them. As nothing is so infectious as ill temper, so nothing tends so rapidly to curb ill temper as that quiet forbearance which a patient spirit diffuses around it like an atmosphere. The mental powers, also, act with much greater effect when the calmness of the judgment is undisturbed by ill temper or impatience. Perseverance may, indeed, exist without patience, and to a certain extent may accomplish its objects; but it is safe to say that more than half the good results which perseverance aided by patience might accomplish, are thrown away if patience does not accompany it.

PAYNE, Joseph, one of the most noted English educators of our times, born in 1808; died April 30., 1876. He received his educational training at the University of London, and early distinguished himself as a teacher of English. For a number of years, he was connected with his *alma mater*. In 1873, he was appointed to the newly-founded professorship of education in the College of Preceptors, the first chair in any public institution in England assigned to that subject. He devoted himself, in this position, and also by his writings, to the promotion of education, making the improvement of methods of teaching his special object. He was the author of *Lectures on Education*, and numerous lectures and pamphlets on allied subjects. He also took an active part in the Woman's Education Union. Mr. Payne contributed several papers to the proceedings of the Philological Society—chiefly on English dialects and the relation of Old English to Norman French. Among his other publications, were text-books on English literature, entitled *Studies in English* (5th ed., London, 1864); *Studies in English Prose* (1867); and *Select Poetry for Children*, which had a very large circulation (15th ed., 1868).

PEABODY, George, an American merchant and banker, born in Danvers, Mass., Feb. 18., 1795; died in London, Nov. 4., 1869. Mr. Peabody's gifts to charitable and educational institutions have been enormous, if not unequaled. Of the latter, the principal are the following: the Peabody Institute, in South Danvers, which he founded by a gift of $30,000, afterwards increased to $200,000; a similar institution in North Danvers, endowed with $50,000; the Peabody Institute in Baltimore, Md., founded by a bequest of $300,000, to which he added $700,000; the Archæological Institute of Harvard College, with an endowment fund of $150,000; and the department of physical science, in Yale College, with an equal fund. The total amount of his bequests to the cause of education exceeds $5,365,000.

PEABODY FUND (Educational), an endowment of extraordinary munificence, created for educational purposes, by George Peabody (q. v.), the first announcement of which was made Feb. 7., 1867, in the following words: "I give one million of dollars for the encouragement and promotion of intellectual, moral, and industrial education among the young of the more destitute portions of the southern and southwestern states of the Union." Ten trustees were selected by him to carry his wishes into effect; and, at a meeting held in New York, March 19., 1867, a general plan was adopted, and Dr. Barnas Sears was appointed agent. On July 1., 1869, Mr. Peabody added a second million to the cash capital of the fund. Besides this, there were donations of Mississippi and Florida bonds amounting to about $1,500,000, not realizing, however, any income. According to the donor's directions, the principal must remain unchanged for 30 years, the trustees being enjoined from expending any portion of it or adding to it any part of the accruing interest. The manner of using the latter, as well as the final distribution of the principal, was left entirely to the discretion of the trustees, who are vested with authority to fill vacancies in their number. "Not a single Southern state," says the agent, "had a modern system of public schools when the trustees first entered upon their work, and now (1875) no state is without such a system, existing at least in law; and every state has either already organized or is now organizing its schools." While it is not claimed by the trustees that all this has been done by means of the distribution of the proceeds of the fund; it must be conceded that this great work has been greatly aided and stimulated thereby. The promotion of primary education for the masses has been the chief object kept in view; and, in the effort to accomplish it, the trustees have followed the "sound maxim of giving help to those, and only to those, who help themselves." Hence, whenever efficient measures have been inaugurated by state, city, or town to establish and support a permanent system of schools, and aid has been needed to meet the outlay necessary at first, contributions have been promptly and liberally made to supplement the funds publicly raised. The rules followed in the distribution have been as follows: (1) All schools aided must have at least 100 pupils, with a teacher for every 50; must be properly graded, and must be continued during ten months in the year, with an average attendance of not less than 85 per cent; (2) The trustees act in concert with the state authorities, and with the co-operation of the state superintendent in each; (3) The largest sum given to a school of 100 pupils is $300; to one of 200 pupils, $600, and to one of 300 pupils, $1000; but always on the condition that the *district* pay at least twice the amount given from the fund.

PEDAGOGY, or **Pedagogics** (Gr. *παιδαγωγία*, from *παῖς*, *παιδός*, a boy, and *ἀγωγός*, leading or guiding), the science and art of giving instruction to children, particularly in school, or as by a school-teacher (*παιδαγωγός*). This term is more generally used in Germany than in the United States or Great Britain, in which the theory and art of the teacher or educator is designated as *instruction* or *education*; indeed, the word *pedagogue* is, in these countries, used as a term of reproach. For information in regard to the various departments of *pedagogy*, see EDUCATION, INSTRUCTION, DIDACTICS, etc.

PEET, Harvey Prindle, a noted teacher of the deaf and dumb, born in Bethlehem, Ct., Nov. 19., 1794; died in New York, Jan. 1., 1873. The ordinary life of the country boy, working on the farm in summer, and attending the district school in winter, when associated with an ardent thirst for knowledge, is by no means an inappropriate school for the development of a self-reliant character. Such was the early life of Dr. Peet, with this additional advantage, that he was surrounded by a society exceptionally refined and cultivated for a country town. At the age of 21, he began to teach; but, becoming ambitious for a college education, he entered upon a course of study while he was teaching, and having finished his preparatory course at Andover, Mass., entered Yale College, from which he graduated in 1822. He received an invitation to teach in the American Asylum for the Deaf and Dumb, at Hartford, and entered there upon a career which he never afterwards abandoned. His own qualifications, and the society of several eminent and successful instructors in this peculiar field, soon gave him a proficiency that led to his appointment as steward of the institution, and, shortly afterwards, to his selection, by the directors of the New York Institution for the Deaf and Dumb, for the situation of principal. He entered upon his new duties in 1831, and found, in the necessary re-organization of the institution, ample field for all his energy. In the training of teachers for the instruction of the unfortunate class with whom he was associated, his peculiar ability and patience were more particularly manifested. This work of re-organization and instruction was long and arduous; but the marked improvement which followed placed the institution on a higher level of usefulness and reputation, that afterwards led to the rebuilding of it on an enlarged scale, and to its incorporation by the state, Dr. Peet becoming its president. This position he continued to hold till his death.—His peculiar service in the cause of deaf-mute instruction deserves not only commendation but careful study by all engaged in that peculiar field of educational labor. In 1844, Horace Mann, after an extended examination of the school systems of Europe, made the assertion that the institutions for deaf-mutes in Prussia, Saxony, and Holland were decidedly superior to any existing in America; the ground of this assertion being that while the American system taught pupils to converse by signs only, the systems in those countries taught the pupils actually to speak, as well as to understand spoken language, and that this latter was the only way in which their defect could be thoroughly remedied. Mr. Mann's great reputation, though not shaking Dr. Peet's belief in the superiority of his favorite method — that of signs, made it necessary to answer this charge in the most conclusive way. To this end, Dr. Weld, of the Hartford Asylum, and Dr. Day, of the New York institution, were sent to Europe on a tour of investigation; and, in the New York institution, a class of the most promising pupils was formed for practice in articulation and lip-reading. After a year's experiment, the class proved a failure, and the exhaustive report made by Dr. Day, on his return from Europe, did not sustain Mr. Mann in his assertions. Dr. Peet regarded uneducated deaf-mutes as children in intelligence; because, of the avenues through which intelligence is increased and perfected, two—hearing and speech—are closed from birth. An evidence of this childish condition is found in the fact that their minds are engrossed by concrete ideas to the almost entire exclusion of abstract ones. Having satisfied himself of this, therefore, instead of attempting to impose upon these immature minds complex and abstract ideas, such as only a person in the full possession of his faculties can entertain, he placed himself on their level, and endeavored to watch the very birth of thought, following the processes by which perceptions become conceptions, and studying the nature of the conceptions so formed.

This led him to adopt a strictly natural method in the instruction of deaf-mutes—a method which should conform to the natural, in the kind of objects first presented for observation, and in the order of presentation. According to this plan, the first to be employed are simple, tangible, or sensuous, objects, the abstract ideas, formed by a generalization of these, having no existence till the concrete ideas have become perfectly familiar by long usage. As to the means to be employed for communicating with deaf-mutes during instruction, his position was always that articulation, except in its most elementary stage, being an arbitrary method for the communication of thought, can be learned, with any degree of accuracy, only by persons in possession of the faculties of both ear and speech; that deaf-mutes, therefore, *i. e.*, born deaf-mutes, will only lose time and patience by attempting to acquire the faculty of speech; and that their efforts should be turned to the developing and perfecting of the sign language as their most efficient means of conversation. Exceptions to this are made in the case of semi-mutes, by which term he meant those who had lost the faculty of hearing after they had learned to speak or read, the semi-deaf, and a few deaf-mutes of exceptional ability; but as these constitute only about fifteen per cent of the whole number of the deaf, the method to be pursued should be that which will benefit the remaining eighty-five per cent. While, however, he considered the sign language the only one natural to deaf-mutes, and therefore the fittest for the development of their minds, it was necessary to keep constantly in view, not only the means by which they were to communicate with each other, but more especially the means by which they were to communicate with the world around them, with the members of which they were to associate, as nearly as possible, on terms of equality. For this purpose, the deficiency of the sign language is at once evident. In the investigation of the causes of this deficiency, Dr. Peet discovered that the natural language of signs had a syntax of its own, which differed from spoken English principally in the following particulars: (1) the order of expression is inverted; (2) the time is marked once only, as in the Hebrew; (3) of the radical elements, there are no variations corresponding to parts of speech; (4) there are no inflections to denote gender, number, person, case, voice, mood, or tense; (5) particles and pronouns are seldom used. Methodical or arbitrary signs, were, therefore, necessary to supply these deficiencies, and the extent to which these should be used, and the method of using them, became a subject not only of difficulty but of controversy. Dr. Peet looked upon the deaf-mute, while learning written English, as in the condition of an English boy learning any foreign language—Latin, for instance. To such a boy, the English word and the Latin word were both, he thought, direct representatives of the idea. His opponents held, on the contrary, that only one of these—the English word—was the direct representative; and that the Latin word represented the idea indirectly, *i. e.*, through the English one. Holding, therefore, as he did, that the written word and the sign were equally direct representatives of the idea, he considered that, in the use of language, the sign should be dropped as soon as possible, and the idea attached directly to the written word. Acting on these views, Dr. Peet prepared, for use in his institution, a course of instruction, arranged to embody two other principles; namely, that ideas should be taught before words, and that difficulties should be gradually and singly overcome. It is not necessary, however, to describe the manner in which these ideas are practically illustrated, in his series of text-books, or to trace their further development in subsequent works. Enough has been said to indicate the distinctive character of his system; and the success which has attended the use of it in the institution which he conducted so many years, and which is, at present, under the care of his son, Isaac Lewis Peet—trained under parental care for the work—appears to be an ample vindication of its correctness. Of the place Dr. Peet should hold in the ranks of those noble men who have given their lives to the work of education, of his high place among the exceptional men who have devoted their energies to the difficult task of lifting the veil from intelligences clouded by misfortune, there can be no question. The essentially Christian character of the work undertaken, the ability and patience with which it was pursued, and the success with which it was attended, must always claim our admiration and demand for Dr. Peet a place among the benefactors of his race. Besides his *Course of Instruction*, and *History of the United States* (1869), Dr. Peet's published works are to be found in articles furnished to various periodicals, in annual reports, addresses, and discourses. By means of these, in addition to his own researches, the results reached by De Gerando, Schmalz, and Guyot were first brought to the attention of the English-reading public. Perhaps, his most valuable contribution, however, was the *Report on the Legal Rights and Liabilities of the Deaf and Dumb*, published in the *Herald of Health* (New York, 1868). It will be seen at once that deficiency of intellect on the part of deaf-mutes raises important questions in regard to their legal rights. This report furnishes valuable information on marriage, the disposal of property, the comprehension of the oath, and many other subjects; and being unique in kind, and supplying, as it does, information not hitherto attainable, it will long be quoted as an authority. — See BARNARD, *American Teachers and Educators;* STYLE, *Summary of the Recorded Researches and Opinions of H. P. Peet* (Washington, 1873), reprinted from *American Annals of the Deaf and Dumb.*

PEIRCE, Cyrus, a noted teacher, born in Waltham, Mass., August 15, 1790; died in West Newton, Mass., April 5, 1860. After attending a district school and the academy at Framingham, he entered Harvard College, and graduated in 1810. For two years, he taught school in Nantucket, but, in 1812, returned to college to prepare himself for the ministry. After three years spent in the study of theology, the persuasions of his former patrons at Nantucket induced him to return to the charge of the school he had relinquished there; and, for three years more, he devoted himself to the work of teaching. At the end of that time, he entered the ministry, in which he continued eight years. Suspecting, however, that his want of a pleasing address was preventing him from using his energies to the best effect morally, and that the faults he sought to correct in adults, could be dealt with more successfully, if taken at an earlier period, he determined to abandon the pulpit for the desk of the teacher. Accordingly, he became with a relative the joint principal of an academy at North Andover, but their want of agreement as to discipline and methods of teaching led to a separation after four years; and, in 1831, he returned to Nantucket where, for six years, he conducted a large and flourishing school. One of his most useful measures was the grading of the public schools of Nantucket. This led, shortly after, to his appointment as principal of the high school in that place, which position he held for thirteen months. In 1839, he accepted the invitation, extended by Horace Mann, to take charge of the normal school at Lexington, the establishment of which had been decided upon as an experiment by the state board of education. Only three pupils presented themselves at the opening of the school, and the prospect was most disheartening. The thoroughness of Mr. Peirce's instruction, however, and his ardent devotion to his work soon attracted attention; the apathy with which his labors were regarded by a large majority of the friends of education gradually gave place to confidence; and the superiority of the graduates of his school to ordinary teachers soon placed the new system in the pathway of assured success. During the three years of his labors at Lexington, more than fifty teachers were graduated, and the testimony generally given as to their fitness for the profession was cordial and almost uniform. In connection with the normal school, he established a model school, in which the methods he taught were put to a practical test under his own supervision. From 1844 to 1849, he taught the Normal School at West Newton, whither it had been removed from Lexington. The principal characteristics of Cyrus Peirce were his deep moral convictions, unwearied patience, and conscientious devotion to duty—the deepest impression left on the minds of all with whom he was associated being that of his unswerving integrity. As the principal of the first normal school in America, specially chosen for the work by one so eminent in the educational annals of the United States, and justifying that choice by self-sacrificing and effective work, at a critical moment, his name will always be accorded a prominent place among American educators.—See BARNARD, *American Teachers and Educators* (New York, 1861).

PENMANSHIP, writing with the pen; although the term is sometimes used to indicate any kind of handwriting, or *chirography*, the pen being the most important instrument for writing. The ability to write is one of the two fundamental characteristics of an educated person, the inability to read and write constituting what is technically called *illiteracy*; and yet, in advanced education, a legible or elegant style of handwriting is not considered of great importance; for the cases are very few in which a candidate either for admission to a college or university, or for a graduating diploma, is rejected for not being able to write, any scrawl, however illegible or inelegant, being usually accepted as evidence of such ability. The consequence is, that good penmanship has not been the distinguishing feature of college graduates, but rather the reverse. When the value of this accomplishment, in every sphere of life, is considered, it will be obvious that the policy of thus disparaging penmanship as the accomplishment of a scholar is an entirely mistaken one. It is true that it cannot be considered as an element of superior instruction; but those who have the direction of that grade of instruction, should always insist upon the completion of the inferior grades as an indispensable prerequisite for admission to higher studies. In elementary schools, penmanship constitutes a very important branch of instruction; and, in these, sufficient time should be given to it to insure, at least, a respectable degree of excellence to each of the pupils.—There are various so-called systems of teaching penmanship, but the underlying principles are the same in all, the difference chiefly consisting in a diversity in the arrangement of the elements of the letters, with slight modifications in their forms and mode of execution, and in the exercises for practice. In order to write well, the pupil must have (1) a thorough knowledge of the forms of the letters, and (2) a command of the pen to execute them. These two fundamental acquirements must be made simultaneously, except that some previous elementary instruction and practice in drawing will aid the pupil very much in his first lessons in penmanship. In these lessons, the forms should be adapted to the pupil's untrained muscles, and should increase in complexity and difficulty *pari passu* with the training of the hand and arm. The proper position of the body and the correct mode of holding the pen are indispensable prerequisites to successful work. Lessons in penmanship also presuppose a careful analysis of the elementary forms of the letters; and, in this respect, systems greatly differ. They have, however, many points in common—indeed every thing that is essential. Commencing with straight lines, to be made at the proper slope, and with perfect parallelism, the pupil advances progressively to the *pot-hook*, the loop, the ellipse, as in the letter *o*, etc., till, by practicing these and their combinations, he has mastered all the *small letters* of the script alphabet, when he proceeds, in a similar manner, with the *capitals*, from which he passes to words, phrases, sentences, and paragraphs. The copy-book should not be used after the pupil has become thoroughly familiar with the proper forms of the letters, and thus acquired a fair style of writing. Much time is frequently lost in compelling pupils, year after year, to write copies. Quantity as well as quality should be required; excellence in penmanship consisting both in correctness and speed of execution. Many useful exercises may be blended with practice in penmanship, as the learning of the forms used in business, such as bills, receipts, modes of superscribing and addressing letters, etc. Practice in *calligraphy*, or artistic penmanship, is also of use, but should not be carried to an extreme in schools. The remarks of an experienced teacher may here be cited: "Constant vigilance, and continual correction of errors, are indispensable to the formation of a good hand. To know how to execute well, then, is the grand requisite in the teacher; the next, to furnish good models; and the third, to have a quick eye to detect faults, and a persistent determination for their correction. These conditions existing, and the principle carried out, your pupils *will write well*, with a reasonable amount and duration of practice." (Gideon F. Thayer, in Barnard's *Journal of Education.*) — See also Payson, Dunton, etc. *Theory and Art of Penmanship* (N. Y., 1863); Wickersham, *Methods of Instruction* (Phila., 1865); *How to Teach* (N. Y., 1874).

PENN COLLEGE, at Oskaloosa, Iowa, under the control of the Friends, was incorporated in 1866 as Iowa Union College Association of Friends. The name was changed in 1873. It has an endowment of $5,000, and a library of about 2,000 volumes. The cost of tuition is $30 a year. The institution comprises a collegiate (a classical and a scientific course), a preparatory, a normal, and a business department. Both sexes are admitted. In 1874—5, there were 12 instructors, and 38 collegiate, 183 preparatory, 41 normal, and 32 business students, of whom some belong to more than one department. John W. Woody, A. M., is the president (1876).

PENNSYLVANIA, one of the largest and most important of the thirteen original states of the American Union. Its area is 46,000 sq. m., and its population, in 1870, was 3,522,050, of whom 65,294 were colored persons. Its population in 1875, was estimated at 3,941,400.

Educational History. — This subject will be treated under the following heads: (I) The Colonial period:. (II) Under the constitution of 1790; (III) Under the constitutions of 1838 and 1873.

I. *The Colonial Period.*—From the founding of Penn's colony on the banks of the Delaware, may be said to date the beginning of Pennsylvania's educational history. The first plan of the proprietary government drafted by Penn before leaving England, in 1682, stipulated that "the governor and provincial council shall erect and order all public schools, and reward the authors of useful sciences and laudable inventions in said provinces." During the following year, a law was enacted by the council of the province, which provided that a school should be established for the education of the young. Immediate steps were taken to put this enactment into execution. The governor and the council, perceiving "the great necessity there is of a school-master, for the instruction and sober education of youth," elected one Enoch Flower, a teacher of several years experience, to open a school. The branches required to be taught were, reading, writing, and the casting of accounts. According to the most authentic records, this was the first school established within the present territorial limits of the state. In different parts of the province, other schools were organized. In 1692, a school was opened at Darby (now in Delaware Co.); and in 1698, the Society of Friends established a school in Philadelphia, where all the children and servants, male and female, "might be taught, and provision made that the poor might be taught gratis." The motto of the school, "Good instruction is better than riches," was selected by Penn. In 1701, the charter of this Friends' School was confirmed by a new patent from Penn, bearing date, October 25., 1701, and, also, by another, in 1708, whereby the corporation was "forever thereafter to consist of 15 discreet, religious persons of the people called Quakers, by the name of Overseers of the Public School, founded in Philadelphia at the request, cost, and charges, of the people called Quakers." Another charter was granted by Penn, in 1711, for extending the rights and privileges of the corporation. This was the first public school in Pennsylvania; and the design of the governor and council in establishing this institution is best set forth in the preamble of the last charter, which reads as follows:

> "*Whereas* the prosperity and welfare of any people depend in a great measure, upon the good education of youth, and their early introduction in the principles of true religion and virtue, and qualifying them to serve their country and themselves by breeding them in reading, writing, and learning of languages and useful arts and sciences, suitable to their sex, age, and degree; which cannot be affected, in any manner, so well as by erecting PUBLIC SCHOOLS for the purpose aforesaid."

As the early settlers pushed their way westward, the progress of education was accelerated by the prosperity of the thrifty colonists. Thus far, the schools established had been chiefly under the direction of the governor and provincial council; though no special provision was made by the authorities regulating the number of schools in accordance with the number of families in each settlement, as was done in some other colonies.—It should be distinctly understood that the school established by the Society of Friends in 1698, and supported by them and conducted under their direct and exclusive control, was open indiscriminately to persons of all religious denominations, and was, for more than half a century, the only public school in the province. In the mean time, new settlements had been formed in various parts of the province; and the school, by reason of its location as well as the want of accommodations, had long been inadequate to meet the educational necessities of the province. Private schools were, therefore, called into existence, whenever the colonists could find means and the opportunity to provide for them.—Among the early *German settlers* the proper instruction of their youth was a subject of deep concern. As early as 1755, they numbered 30,000 souls; and, wherever a sufficient number were settled, the church and the schoolhouse were erected. From 1760 until the close of the Revolution, the vicissitudes of the colony were so great as to prevent the establishment of any educational system whatever. At the close of the Revolution the first fundamental law adopted by the people recognized the right to provide schools and defray the expense thereof, to a certain extent, from the public funds.

II. *Under the Constitution of* 1790.—The constitution of 1790 required that the legislature should "provide by law for the establishment of schools throughout the state in such a manner that the poor may be taught gratis;" and, also, that "the arts and sciences shall be promoted in one or more seminaries of learning." The constitutional convention of 1790, however, did not contemplate the establishment of a system of common schools which should be free to all the children of the commonwealth, nor, prior to 1830, was the establishment of such a system recognized by many as a legitimate object of state legislation, or even regarded as a matter of great public concern. The opinion which long prevailed was, that this duty belonged exclusively to parents and guardians; and when the legislature, soon after the adoption of the constitution, took action on the subject, nothing more was done than to make provision whereby the poor children in every district were to be enrolled for the purpose of attending school if they wished, their tuition to be paid out of the county funds. Laws of the same import were enacted in 1802, 1804, and 1809. That of the last date was entitled "An act to provide for the education of the poor gratis," and remained in force up to the time of the adoption of the first common-school system, in 1834. The new system was called by those who disliked it the "pauper system," as it drew a line of distiuction between the rich and the poor, the children in all the schools being divided into two classes known as *pay scholars* and *paupers*. The whole number of children who were brought into the schools, in the year 1833, the last in which these acts were in force, was only 17,467, and the whole amount expended in their behalf, $48,466.25. Opposition to the *pauper system* manifested itself from the beginning; but many years elapsed before the friends of a broader and better system, were able to make their influence felt in the legislature. This influence was increased in 1818, when Philadelphia was exempted from the operation of the pauper system, by the passage of a special act, which provided for the education of its children at the public expense. This same act, with a few changes, is still in force in that city. In 1827, a number of citizens, residing in the city and county of Philadelphia, formed an association for the promotion of education in the state, by the establishment of a system of public schools; and, after considerable agitation, the measure, being strongly urged by George Wolf, then governor, was adopted by the legislature, April 1., 1834. The act passed was, however, defective, and encountered the most violent opposition. During the legislative session of 1834—5, thousands of petitions were presented, asking for the repeal of the law, and few of the representatives had sufficient courage to defend it openly. Notwithstanding this, it was defended by Thaddeus Stevens, then a representative from Adams County, who, at this critical moment, made one of his most eloquent appeals in its behalf, and thus saved the system. According to the report of James Findlay, secretary of the commonwealth, and superintendent of common schools, *ex officio*, only 93 districts, out of 900, accepted the system during the first year it was in operation. The average length of the school term at that time was 3¼ months; the number of schools, 451; and the number of pupils in attendance, 19,864. The average salary paid to teachers was not quite $16 a month. Opposition to the law creating the system, continued to increase as its defects became more apparent. One of the first official acts of Governor Ritner, in 1835, was to appoint as secretary of the commonwealth Thomas H. Burrowes, who, by virtue of his office, became superintendent of common schools. He remained, through his whole public career, a steadfast friend of the system. In 1835, a new bill was presented "to consolidate and amend the several acts in relation to a system of education by common schools," in securing the passage of which both Mr. Stevens and Mr. Burrowes rendered valuable assistance. The acceptance of the new law was made optional with each district, the citizens being allowed to vote on the question of the continuance of the public schools every third year. The great work now to be done was to secure the adoption of the system by the people, and to put it into operation. Mr. Burrowes, the superintendent, undertook this work. He visited nearly all the counties in the state, delivered addresses, explained the law, prepared the necessary forms,—and succeeded in placing the system upon a firm basis. His success was so great that, in the third and last report made during his term of office under Governor Ritner, he was able to present the following statistics: accepting districts, 840; number of schools, 5,269; number of teachers, 6,732; number of pupils, 174,733. The state appropriation, also, had reached the sum of $308,819; a tax had been raised for the support of schools, amounting to $385,788; and the average school term had been extended to 5¾ months.

Forty years elapsed from the time of the organization of the state government to the adoption of the common-school system. It must not, however, be inferred that, during this period, there was no legislation relating to education; such as there was, however, was generally in the interest of private schools. The policy of the legislature seemed to be, to establish, first, academies, colleges, and universities. The whole number of acts passed, mostly in behalf of such institutions, was 186; and the whole amount of appropriations, in money or its equivalent, bestowed chiefly on corporate bodies, including academies, colleges, and universities, reached nearly $300,000. In 1833, there were 2 universities, 8 colleges, and 50 academies, all of which had been liberally aided by the state.

III. *Education under the Constitutions of* 1838 *and* 1873.—In 1838, a convention met in Philadelphia to revise the constitution of the state. On the subject of education, it recommended, without change, the provisions found in the constitution of 1790. The common-school system had now been in operation several years, and was gradually commending itself to the people. Important changes in the law took place from time to time. In 1848, the people having previously, in the triennial election, in every part of the state, voted for the continuance of the system, an act was passed extending it over the entire state. At this time, 360,000 youths of the commonwealth were enrolled in the public schools, and taught about five months in the year, at a cost of about $600,000. In 1849, all the laws relating to schools were collected and codified. In January, 1852, Thomas H. Burrowes commenced the publication of an educational journal, the title of which, at the end of the first half year, was changed to the *Pennsylvania School Journal;* and, in 1855, it became the official organ of the school department. In 1870, James P. Wickersham, the state superintendent, became its editor; and, since that time, it has gained largely in influence and circulation. On the 28th of December, 1852, a small number of prominent teachers and friends of education met at Harrisburg and organized the State Teachers' Association, which has convened annually since that time. In 1854, a general school law was passed, which created the office of county superintendent, abolished committees in sub-districts, assigning, instead, additional duties to school directors, authorized the appointment of a deputy state superintendent, introduced uniformity of text-books into the schools of each district, fixed the minimum school term at 4 months, and authorized boards of school directors to levy a special tax annually for building purposes. April 17., 1855, the Lancaster County Normal Institute was opened in Millersville by J. P. Wickersham, who was then superintendent of the above named county. In 1857, the normal school act was passed, also a law separating the office of state superintendent from that of secretary of the commonwealth, and creating, at the same time, the department of common schools. The county superintendency, which had just been put in operation, under the new law, was, at this time, so unpopular, that, at times, it seemed as if its enemies would succeed in bringing about its abolition. Principally, however, through the efforts of the state superintendent, Mr. Hickok, the office was retained; and his administration throughout was successful in the highest degree. —In 1859, the Millersville Normal Institute, under the supervision and principalship of its founder, was recognized by the state authorities as the first normal school under the law. In 1867, cities and boroughs of over 10,000 inhabitants were authorized to elect superintendents; teachers' institutes were legalized in all the counties of the state, and authority was given to the state superintendent to issue a high grade of certificate, called the *permanent certificate,* to teachers possessing superior qualifications.

Article x. of the constitution of 1873 declares that the general assembly shall provide an efficient system of common schools, for all children above six years of age, and shall appropriate each year at least $1,000,000 for its support. It prohibits the use of any of this money for the support of sectarian schools, and provides that "women twenty-one years of age and upwards, shall be eligible to any office of control or management under the school laws of this state". It changes the title *Superintendent of Common Schools* to *Superintendent of Public Instruction,* and makes the term of that office four years.

The following table gives the leading items of schools statistics for 1866 and 1876, thus showing, in part, the progress of the common-school system during the last ten years:

	1866	1876
Number of districts........	1,863	2,103
" " schools........	13,146	17,497
" " graded schools.	2,800	5,957
" " pupils.........	789,389	902,345
Cost of tuition............	$2,748,795.08	$4,856,888.91
" " school-houses.....	725,000.00	1,735,148.87
Total cost of system.......	4,195,258.57	9,163,928.68
State appropriation.......	355,000.00	1,000,000.00

The state superintendents have been as follows: James Findlay, 1835—6; T. H. Burrowes, 1836—8; F. R. Shunk, 1839—41; A. V. Parsons, 1841—2; Charles McClure, 1843—5; Jesse Miller, 1846—8; Townsend Haines, 1849—50; A. L. Russell, 1851—2; F. W. Hughes, 1853—4; C. A. Black, 1854—5: A. G. Curtin, 1856—7. The persons above named filled the office of superintendent, by virtue of holding the office of secretary of the commonwealth. In June, 1857, the Department of Common Schools was organized; and, since that time, the following named persons have been commissioned as superintendent: H. C. Hickok, 1858—60; T. H. Burrowes, 1860—63; C. R. Coburn, 1863—6; J. P. Wickersham, from 1866 to the present time (1877).

School System.—The educational interests of the state are intrusted to a *superintendent of public instruction,* who is appointed by the governor of the commonwealth, and confirmed by the senate. His term of office is 4 years. His duties are to decide all controversies between school officers; to give advice and explanation relative to the common-school law, the duties of school officers, and the rights and duties of parents, guardians, teachers, and pupils; to sign all orders on the state treasurer for the payment of the state appropriation to the several districts, and for salaries of county superintendents; to prepare blank forms for the use of school officers and the department of public instruction; to commission county, city, and borough superintendents; to appoint trustees for normal schools, and committees to examine annually the graduating classes of the state normal schools; to fill all vacancies among county superintendents; and to make an annual report to the governor and the state legislature.—The school directors of each county meet in convention at the county seat, on the first Tuesday of May, every third year, and elect a *county superintendent* for a term of three years, and fix his salary for the same time. He must be a legal resident of the county; and must have one of the following documents: a diploma from a college, a diploma from a state normal school, a *professional* or *permanent certificate*, or a certificate of competency from the state superintendent. He must, also, have skill and experience in teaching.—The duties of the county superintendent are, to examine teachers and give certificates, setting forth the qualifications of applicants; to visit the schools as often as possible, and give instruction in teaching and school government; to see that orthography, reading, writing, arithmetic, geography, and grammar are taught in all the schools; to hold annually a teachers' institute which must remain in session 5 days; to annul certificates of teachers for incompetency, cruelty, negligence, or immorality; to examine, affirm, and forward to the state department the annual reports of the several boards; and to make an annual report to the state superintendent. Cities and boroughs having not less than 7,000 inhabitants, may elect superintendents of their own. The duties and powers of such officers are similar to those of county superintendents. The state is divided into school-districts; each township, borough, and city constituting one district. *School directors*, generally six in number, are elected in each district by the people for a term of 3 years, and constitute the district school board. The officers of each of these boards are a president, a secretary, and a treasurer. It is the duty of the president to issue warrants for the collection of taxes; to sign all orders, deeds, and contracts; to attest by oath or affirmation the correctness of the annual statement of expenses, liabilities, etc., which must be presented to, and accepted by, the department of public instruction before a warrant for the annual state appropriation is issued. The duties of the secretary are to keep minutes of all the proceedings of the board; to prepare duplicates for the tax collector; to prepare and forward the annual district report and certificate; to examine and approve monthly reports of teachers; and to keep in charge all valuable papers. The treasurer receives all moneys, disburses the school moneys on proper orders; and settles his accounts annually with the board and auditors. The school boards must organize each year within ten days after the first Monday in June. Their duties are to establish a sufficient number of schools; to fill vacancies in the board; to levy a tax for school and building purposes; to select sites for, and erect, school houses; to fix the length of the school term; to appoint teachers and fix salaries; to grade schools when necessary; to direct what branches shall be taught; to decide what text-books shall be used; and to visit the schools at least once a month. These boards, also, may dismiss teachers for cruelty, negligence, incompetency, or immorality. They pay all expenses by order on the treasurer, and publish annually a statement setting forth the receipts and expenditures of the district. The *school revenue* is derived from the following sources: (1) a state appropriation of not less than $1,000,000, to be annually distributed among the several districts upon the basis of the number of taxable citizens; (2) a school tax not to exceed 13 mills on each dollar of the assessed valuation, to be levied and collected annually, to pay teachers' salaries and other necessary expenses of the schools; (3) a "building tax" to be levied and collected annually, if the school board deem it necessary, but not to exceed the amount levied for school purposes. This tax is used in paying for sites for school-houses, and the erection and repairs of school buildings. The studies to be pursued in the common schools, not being strictly designated by law, have been left, by the interpretation of the state superintendent, to the discretion of the local boards, who are governed in their decision by the wants of their districts. These boards, also, may establish separate schools for colored children, whenever they can be so located as to accommodate 20 or more pupils. The school age is from 6 to 21 years; the school year, 5 months of 22 days each.

Educational Condition.— The number of school-districts in the state is 2,103; the number of schools, 17,497, of which 5,957 are graded. The school revenue, exclusive of $28,000 for normal schools, for the year ending June 1., 1876, was as follows:

From local tax	$8,659,738.67
" state appropriation	972,000.00
Total	$9,631,738.67

The expenditures for common-school purposes were as follows:

For tuition	$4,856,888.91
For building, purchasing, and renting school-houses	1,735,148.87
For fuel, contingencies, etc.	2,471,890.90
Total	$9,063,928.68

The principal items of *school statistics* for 1876 are as follows:

Number of children enrolled in public schools	902,345
Average daily attendance	578,718
Number of teachers	20,192
Average monthly salary of male teachers	$38.72
" " " " female "	$30.42
Estimated value of school property	$26,265,925.28

Normal Instruction.—The normal school law, enacted in 1857, divides the state into 12 districts, allowing one normal school in each. Nine have already been organized, and are in operation under this act. Philadelphia has a girls' normal school, which was opened in 1848. The whole number of students who attended the state normal schools during 1875, was 3,724; the number of graduates, 191; the number of professors and teachers, 114; the number of volumes in the libraries, 13,000; the value of buildings and grounds, $940,000; the whole amount appropriated to all the schools, $350,000. The entire income from all sources during the same time was $357,996.91; total expenditures for all purposes, $350,173.83.

Teachers' Institutes.—In 1867, a law was passed requiring a teachers' institute to be held once a year in each county, to continue in session 5 days. To defray the expenses, superintendents are entitled to draw from the county treasury a sum of money not exceeding $200. The attendance of teachers in 1875, was 13,523; the number of school directors, 1,812; the number of instructors and lecturers, 435; the whole amount expended was $21,160.54.

Secondary Instruction.—The number of public schools in the state in which instruction in the higher branches was given in 1875, was 1,601. Besides these, there were 88 academies and seminaries, that reported to the U. S. Bureau of Education, and also 7 preparatory schools, and 10 business colleges.

Superior Instruction.—The following is a list of colleges and universities in the state:

[The names of those for females exclusively are printed in *italics*; those for both sexes, in SMALL CAPS.]

NAME	Location	Date of charter	Denomination
ALLEGHENY COLLEGE..	Meadville	1817	M. Epis.
Allentown Female Coll..	Allentown	1867	Ref.
Dickinson College....	Carlisle	1783	M. Epis.
Franklin and Marshall College............	Lancaster	1853	Ref. (Ger.)
Haverford College....	Haverford Coll.	1833	Friends
Irving Female College..	Mechanicsburg	1857	Non-sect.
Lafayette College.....	Easton	1826	Presb.
La Salle College......	Philadelphia	1863	R. C.
Lebanon Valley Coll..	Annville	1867	Un. Breth.
Lehigh University....	So. Bethlehem	1866	Pr. Epis.
Lincoln University...	Chester Co.	1854	Presb.
Mercersburg College.	Mercersburg	1865	Ref.
MONONGAHELA COLL..	Jefferson	1867	Bap.
Muhlenberg College..	Allentown	1867	Luth.
NEW CASTLE COLLEGE.	New Castle	1875	Non-sect.
PALATINATE COLLEGE.	Myerstown	1868	Ref.
Pennsylvania College.	Gettysburg	1832	Ev. Luth.
Penn. Female College..	Collegeville	1853	Non-sect.
Penn. Female College..	Pittsburgh	1869	Non-sect.
Penn. Military Acad..	Chester	1862	Non-sect.
Pittsburgh Female Coll.	Pittsburgh	1854	M. Epis.
St. Francis College...	Loretto	1844	R. C.
St. Joseph's College...	Philadelphia	1852	R. C.
St. Vincent's College..	Latrobe	1870	R. C.
SWARTHMORE COLLEGE	Swarthmore	1864	Friends
Thiel College.........	Greeneville	1870	Ev. Luth.
UNIV. AT LEWISBURG..	Lewisburg	1846	Bap.
University of Penn...	Philadelphia	1755	Non-sect.
Ursinus College......	Freeland	1869	Ref.
Villanova College.....	Villanova	1848	R. C.
Washington and Jefferson College.....	Washington	1802	Presb.
Waynesburg College.	Waynesburg	1850	Cu. Presb.
Western Univ. of Penn.	Pittsburgh	1819	Non-sect.
WESTMINSTER COLL...	New Wilmingt'n	1852	Un. Presb.
Wilson College.........	Chambersburg	1869	Presb.

For further information in regard to these institutions, see the respective titles, in other parts of this work.

Professional and Scientific Instruction.—Many of the institutions enumerated under the head of *superior instruction* have special departments in which professional or scientific instruction is given. The principal schools of each class are enumerated in the following tables:

MEDICAL SCHOOLS.

NAME.	Location	Date of charter	No. of instructors	No. of students
Hahnemann Med. College of Philadelphia.	Philadelphia	1848	13	140
Jefferson Med. College	Philadelphia	1825	17	500
Penn. Coll. of Dental Surgery............	Philadelphia	1856	20	90
Phila. College of Pharmacy................	Philadelphia	1822	3	316
Phila. Dental College.	Philadelphia	1863	21	105
Woman's Med. College of Pennsylvania.....	Philadelphia	1850	14	75

SCHOOLS OF SCIENCE.

NAME.	Location	Date of charter	No. of instructors	No. of students
Franklin Institute....	Philadelphia	1824	—	—
Polytechnic College of the State of Penn....	Philadelphia	—	—	—
Penn. State College...	State College	1854	11	144
Wagner Free Institute of Science...........	Philadelphia	1855	7	300 to 1200

THEOLOGICAL SCHOOLS.

NAME.	Location	Date of charter	Denomination
Augustinian College.. of Villanova.........	Villanova	1848	R. C.
Crozer Theological Seminary......	Upland	1867	Bap.
Div. School of Prot. Epis. Church.... ...	Philadelphia	1862	Prot. Epis.
Moravian College and Theol. Seminary.....	Bethlehem	1864	Moravian
Meadville Theological School	Meadville	1846	Unitarian
Missionary Institute..	Selin's Grove	1858	Evan. Luth.
St. Michael's Seminary	Pittsburgh	1845	R. C.
St. Vincent's Seminary	Philadelphia	—	R. C.
Theol. Seminary of St. Chas. Borromeo.....	Lower Merion	1838	R. C.
Theol. Seminary of the Ref. Church.........	Lancaster	1831	Ref.
Theol. Seminary of Ev. Luth. Church.......	Gettysburg	1827	Evan. Luth.
Theol. Seminary of Ev. Luth. Church........	Philadelphia	—	Evan. Luth.
Theol. Seminary of Un. Presb. Church...	Allegheny	1830	Un. Presb.
Western Theol. Sem. of Presb. Church....	Allegheny	1844	Presb.

Special Instruction.—The Pennsylvania Institution for the Deaf and Dumb was founded at Philadelphia, in 1821. The minimum age for admission is 10 years. It combines with a course of elementary instruction in common school branches, special instruction in industrial pursuits, principally shoe-making and tailoring. The number of instructors, in 1875, was 17; the number of pupils, 338. The number of graduates, since the organization of the institution, is 1,566. There is a day school for deaf-mutes at

Pittsburgh, which was founded in 1869, as a part of the school system of that city, and is supported partially by a small appropriation from the city school fund. The Pennsylvania Institution for the instruction of the Blind, at Philadelphia, was founded in 1833, as a private institution, but has been for some time in receipt of a state appropriation, which, in 1875, amounted to $39,000. It gives instruction in music and common-school branches, and special instruction in a large number of mechanical and industrial pursuits. The number of instructors and employés, in 1876, was 63; the number of pupils, 207. Since its foundation, 885 pupils have been admitted. The Pennsylvania Training School for Feeble-Minded Children was established, in 1853, at Media. In 1875, the number of instructors and employés was 60; the number of pupils, 225. Of 372 children admitted since 1864, about 247 have been dismissed in an improved, and 49 in a self-supporting, condition. The three institutions above mentioned are open to inmates from the two adjoining states, New Jersey and Delaware. Girard College was established, in 1848, for the benefit of white male orphans born in Pennsylvania. The course of study covers from 8 to 9 years, and includes common-school branches, and such additional studies as fit for progress in practical or business life. The Educational Home for Boys, and the Lincoln Institution, both in Philadelphia, are intended principally for orphans; the latter, for those of soldiers especially, though others are admitted. Elementary instruction is given in both. The Aimwell School Association, in Philadelphia, was incorporated in 1859, its origin being traced to the efforts of Anne Parish, a Friend, who resided in Philadelphia in 1796. The association formed by her numbered at first only three members, but, in 1799, had increased to eighteen. Their object was to teach poor girls the common English branches and sewing. The association now numbers 119 members. Instruction of an elementary grade, or in special branches, is also given in 2 reform schools, and more than 30 orphan homes and industrial schools in various parts of the state.

PENNSYLVANIA, University of, in Philadelphia, comprises four departments: the department of arts, the Towne scientific school, the department of medicine, and the department of law. It grew out of a charitable school established by subscription in 1745, became an academy in 1749, and was chartered, in 1755, as The College, Academy, and Charitable School of Philadelphia. It was created a university in 1779; and, in 1791, the present organization was established. The medical department dates from 1765, and the law department from 1789. In 1865, an Auxiliary Faculty of Medicine was constituted, for the purpose of supplementing the ordinary course of medical instruction by lectures given during the spring months on certain collateral branches of science. The university buildings, situated in the portion of the city known as West Philadelphia, are new, and comprise a hall for the departments of arts, science, and law, the medical hall, and the university hospital. The institution has extensive chemical and physical apparatus, cabinets of fossils and minerals, and valuable medical cabinets. The libraries contain about 20,000 volumes. The endowment amounts to about $1,000,000, of which only one half is, at present, productive. The cost of tuition in the departments of arts and science is $150 a year. The regular course in the department of arts, comprising the usual collegiate branches, is four years. The regular courses in the scientific school, each of four years, are: (1) analytical and applied chemistry and mineralogy; (2) geology and mining; (3) civil engineering; (4) mechanical engineering; (5) drawing and architecture; (6) general course. There is also a post-graduate course. In 1875—6, the number of professors was as follows: department of arts, 13; science, 14; medicine, 7; medicine (auxiliary faculty), 5; hospital 12; law, 5; total, deducting repetitions, 43, besides which, there were 5 lecturers and other instructors. There were 857 students; namely, arts, 114; science, 126; medicine, 415; medicine (auxiliary), 110; law, 92. The charity schools connected with the university (one for boys and one for girls) affording instruction in the English branches, had three teachers and 136 pupils. Charles J. Stillé, LL. D., is (1876), the provost of the university.

PENNSYLVANIA COLLEGE, at Gettysburg, Pa., founded in 1832, is under Lutheran control. It grew out of the Gettysburg Gymnasium, an institution that had been established for the preparation of young men for the Lutheran ministry. It is supported by tuition fees and the income of an endowment of $140,000. The college has an astronomical observatory, chemical and philosophical apparatus, a chemical laboratory, and a botanical and a mineralogical cabinet. The libraries contain 19,550 volumes. There is a classical and a special scientific course, and a preparatory department. The cost of tuition, in the college, is $50 a year; in the preparatory department, $39. In 1874—5, there were 12 instructors and 152 students (83 collegiate and 69 preparatory). The presidents have been as follows: the Rev. Charles Philip Krauth, D.D., 1834—50; the Rev. Henry Lewis Baugher, D. D., 1850—68; and the Rev. Milton Valentine, D. D., the present incumbent (1876), appointed in 1868.

PENNSYLVANIA MILITARY ACADEMY, at Chester, Pa., was founded in 1862, and is designed for resident cadets only. It has commodious buildings situated on an elevated site, the grounds comprising 25 acres, in part tastefully laid out and ornamented with trees. It has astronomical, chemical, mathematical, and physical apparatus, and a library of 1,200 volumes. The cost of tuition, board, etc., is $550 a year, with music extra. The courses of instruction are the English (2 yrs.), collegiate preparatory, scientific (4 yrs.), civil engineering (4 yrs.), chemical and mining engineering (each 1 yr.), designed for graduates in civil engineering, and collegiate or classical (4 yrs.). The degrees conferred are S. B., C. E., Ph. B., M. E., and A. B. Military instruction, theoretical and practical, is given. The former is optional; the latter is required of all, and consists of drills in infantry and artillery tactics etc. In 1876—7, there were 10 instructors and 126 students (scientific course, 113; English course, 13). The number of graduates (all C. E.), including those of 1876, is 76. Col. Theodore Hyatt, M. A., is (1876) the president.

PENNSYLVANIA, The Western University of, at Pittsburgh, Pa., was founded in 1819. It is undenominational, and is supported by tuition fees, ranging from $72 to $100 a year, and the income of an endowment of $275,000. It has a well-equipped astronomical observatory (situated in Allegheny), a cabinet containing over 10,000 choice specimens in geology, conchology, mineralogy, and zoölogy, extensive philosophical and chemical apparatus, and libraries containing about 6,000 volumes. The university has a collegiate department, with a classical course of 4 years, two scientific courses of 3 years each, and two engineering courses (civil and mechanical) of 4 years each, leading respectively to the degrees of A. B., Ph. B. or S. B., and, C. E. or M. E., besides, a preparatory department, with a classical and an English course of 3 years each. In 1875—6, there were 16 instructors and 272 students, of whom 186 were preparatory and 86 collegiate (29 unclassified, 11 engineering, 28 scientific, and 18 classical). The present chancellor is (1876) George Woods, LL. D., appointed in 1858.

PENSIONS, Teachers'. The justice and expediency of granting pensions to teachers of public elementary schools, on retiring after a long and faithful service, have frequently been urged; and, with others, the following arguments have been advanced in support of such a measure: (1) The office of elementary teacher requires an amount of bodily and mental vigor, patience, tact, and elasticity of spirit, rarely met with in any one who has spent twenty or thirty years in a harassing profession; (2) the salaries received by such teachers afford them no sufficient margin by means of which to make adequate provision for old age; (3) there is no prospect that the salaries of teachers will be increased to any great extent in the future; since, by means of normal and training schools, the supply of teachers is generally greater than the demand; (4) since, therefore, teachers cannot themselves make due provision for old age, the government employing them should do so; because, if it does not, the service will suffer by the retention of aged and worn-out teachers beyond the period of superannuation. In view of these facts, the Committee of Council on Education, in England, by a minute dated Dec. 21., 1846, enacted the following: "That a retiring pension may be granted by the Committee of Council to any school-master or school-mistress who shall be rendered incapable, by age or infirmity, of continuing to teach a school efficiently; provided that no such pension shall be granted to any school-master or school-mistress who shall not have conducted a normal or elementary school for fifteen years, during seven, at least, of which such school shall have been under inspection." This minute was afterward modified, and the amount to be annually expended in pensions was limited, Aug. 6., 1851, to £6,500; but, subsequently, even this was ignored. English teachers and their friends have, however, claimed that the government having held out the inducement to persons to enter upon and continue in the service as teachers, is morally bound to grant the pensions thus virtually promised. In 1872, a select committee of the House of Commons, appointed to consider the matter, reported against the teachers' claims; but the code of 1876 permits the payment of pensions.—In 1876, a law permitting such pensions passed the assembly, in the state of New York, but failed in the senate.—In Prussia, teachers of public schools, being regarded as state officers, are entitled to pensions. Every teacher, however, is required to make an annual contribution to the pension fund (from 1 to 2 per cent of his annual salary), and has also to pay into the same one-half of his first year's salary. Special funds have been established, by private munificence, in connection with many of the schools, for the support of the widows and orphans of deceased teachers. The *Pestalozziverein* of Germany is a society one of the special objects of which is to aid superannuated teachers.—In France, the pensions of schoolteachers and their widows are regulated by the law of June 9., 1853. All the pensions are entered in the *grand book* of the public debt. In aid of the pension fund, contributions are made from the following sources: (1) a deduction of 5 per cent of the regular salary; (2) one-twelfth of the first year's salary, and of every increase of salary; (3) all deductions made in consequence of absence, and all fines imposed upon teachers. A teacher begins to be entitled to a pension when he is 60 years of age, or after having been in office 30 years. The amount of the pension is based upon the average of the incomes, subject to the above deductions, received during the last six years of service. (For a full account of French legislation on this subject, see Gréard, *La Législation de l'Instruction Primaire,* vol. III.) — In Servia, in 1875, regulations were adopted granting to teachers who resigned after ten years' service, 40 per cent of the salary previously received, and 2 per cent more for every additional year's service, for 35 years, after which the teacher, of whatever grade, is entitled to his full salary as a pension.

PERCEPTION, or Perceptive Faculties. See Intellectual Education.

PERSIA, a country of western Asia, having an area of about 638,000 sq. m., and a population estimated at 5,000,000, nearly all of whom are Mohammedans.

I. *Ancient Persia.* — Among the Indo-Germanic tribes west of India, the Bactrians were the first to attain any considerable culture. They were, however, soon reduced in importance by the neighboring and kindred nation, the Medes, and subsequently still more by the Persians, who in the 6th century B. C., under Cyrus the Great, overran a large part of western Asia. While China had its family education, and India that of caste, education in Persia was decidedly a national institution. There, as in India, the people were divided into several distinct castes; but the separating line was not strictly drawn; and, before the king, all were equal. The state, as represented by the king, was the highest object of veneration; and all interests, whether of caste, of the family, or of children, were subordinated to it. The education of the people was like their life. In Persia, the child was born and educated for the state; and, for that reason, we see here, for the first time, physical combined with mental education. The national education of the Persians comprised the first twenty-four years of life. Very little was done for the education of girls, since they occupied, as among most of the oriental nations, an inferior position. Boys remained, up to their 7th year, with the women; but after that, the national education began. In all the larger towns, there were public educational institutions in which the boys lived together. These schools were open to every one, as any Persian could legally occupy the highest offices. In their schools, they were instructed to practice truth, justice, and self-command, and were trained in riding, the use of the bow and arrow, and other weapons. Reading and writing were also taught, but in a limited degree. On the completion of his 15th year, the boy was regarded as entering upon the age of a young man. The bond connecting the parents and the children was now dissolved; for the young man, now belonging to the state, must prepare himself, by suitable physical exercises, for the chase and for war. On completing his 25th year, the youth became a man and a citizen. He accepted the duties which he had to perform up to his 50th year, after which he was obliged to care for the general welfare by supervising or conducting the education of the boys. Persian education was, on the whole, an effort to impart moral and physical perfection. School instruction seems to have been neglected, probably because the state needed, at first, only moral and physical excellence in its citizens: for when the Persians had become a great nation, they regarded the preparation for citizenship as the grand object of education; and, if in this they partly lost sight of the individual, they, for the first time in history, recognized education as a matter of public concern—a duty of the state. This principle was, however, not fully carried out; for the female sex were almost entirely excluded from public education, and the great mass of the people had no time for it, being forced to work in order to support the king and his servants, or to expose their lives in war. Xenophon tells us that, besides the general education, there was a particular education for the higher classes. In the dialogue *Alcibiades* (which is ascribed to Plato), the education of the kings is described as follows: "At the completion of his 7th year, the boy learns to ride and to hunt; and, in his 14th year, he is handed over to the so-called royal preceptors. These are four noble Persians, selected for their virtues, and known as the wisest, the most just, the most temperate, and the bravest of men."

II. *Modern Persia.*—According to the institutions of modern Persia, the boy, in his 6th year, is consigned to the care of a private teacher, or is sent to school. It was formerly considered unnecessary to educate girls; but, at the present time, in Persia, female education is steadily gaining ground. For the poorer classes, there are mixed schools, in which instruction is given for a certain small compensation; but all schools are private institutions, and any man able to write may open a school. As soon as the children possess a knowledge of the alphabet, and can spell with some facility, the Koran is taken up, which is read by the teacher with an Arabic accent, and is repeated and learned by heart by the children, without being translated or understood by them. At the same time, the most important and most difficult study, writing, is begun. The teacher writes a line as a model, and the children are required to imitate the characters on a piece of paper. When the Koran has been read several times, the children are given Saadi's *Gulistan* to read; and they read the numerous tales contained in this work without understanding their meaning, and learn its epigrams by heart. This is considered the highest attainment of education; for the Persians like to spice their conversation with quotations. On completing their 10th year, the poorer boys enter the business of their father, or accept the position of page. The wealthier boys, however, are consigned to the care of a teacher, who instructs them in grammar and letter-writing, explains to them difficult passages from the legends and the laws, and reads with them the *Shah Nameh* (*Book of Kings*) of Firdousi, the odes of Hafiz, and other works. This generally completes their education, and, at the 15th or 16th year of age, they enter the civil or military service of the state. Recently, high schools or colleges have been established in the principal cities, on the European plan. The studies pursued are astronomy, astrology, rudimentary chemistry, alchemy, logic, metaphysics, mathematics, theology, and the Arabian and Persian languages. In the government college, in Teheran, instruction is given in French and English. Shiraz has the largest number of colleges (ten), but the most extensive college is at Ispahan. For a full account of the educational system of modern Persia, see POLAK, *Persien. Das Land und seine Bewohner* (Leipsic, 1865).

PERU, a republic of South America, having an area of 510,000 sq. m., and a population of about 2,500,000. Of the inhabitants, 57 per cent are Indians, 22 per cent, half-breeds, 14 per cent, whites, and 7 per cent, negroes and their descendants. Nearly all the inhabitants belong to the Roman Catholic Church. Peru was first discovered by Francisco Pizarro, who in 1531, began the conquest of the country for the king of Spain; and, in less than twenty years, the Spanish rule was completely established. Among the Spanish provinces of South America, which, during the first part of the 19th century, achieved their independence, Peru was the last to rebel; but, in 1826, it gained a final victory over the Spaniards, by the capture of Callao.—Under the incas, the native rulers of Peru, the people made considerable advancement in education; but they remained, in this respect, inferior to the Aztecs. The Spaniards, soon after their conquest of the country, began to introduce their educational system. The university of Lima was founded in 1551; and, in 1571, its faculties were regularly organized. In 1650, it had over 20 professors of the Spanish and Quichua languages, law, medicine, philosophy, and theology. Besides the university, there were in Lima several other institutions of learning, one of which was particularly devoted to giving instruction in Latin and literature. The elementary schools were free, and even furnished the children with books and writing materials. Owing to the numerous civil wars, education was, for a long time, at a stand-still in the republic. In 1855, public instruction of all grades was placed under the supervision of a *direccion general de estudios;* and, since that time, it has made steady progress. President Pardo, in his message of 1874, states that "admission to the universities is now confined to such as are quite prepared to enter upon university studies. A number of competent teachers have been engaged in Europe, and the services of many more will be engaged. Arrangements are likewise on foot for the establishment of suitable normal schools. The departmental councils are authorized to institute correctional agricultural schools for uneducated children, to be supported out of certain branches of the ordinary contributions." According to the latest accounts, there were in the republic 790 elementary or primary schools. Of these, 502 (450 for boys, and 52 for girls) were public, and 288 (206 for boys, and 82 for girls) were private. The number of pupils was 34,326, of whom 29,687 were boys, and 4,639 were girls. The normal school for primary teachers, in Lima, had 300 pupils; of whom, 36 were supported by the state. In order to improve female education, the Peruvian congress, in 1873, passed a law that every community of more than 500 inhabitants, should establish a school for girls. There are 5 universities—in Lima, Trujillo, Ayacucho, Cuzco, and Puno. These universities, however, only confer degrees, the studies being pursued in *colegios*, of which there were, according to the latest accounts, 30, and of these, 3 were for girls. The largest of these were the *Colegio de San Carlos*, and the *Colegio de la Independencia*, both in Lima, the latter of which is considered the best medical school in South America. There are also 38 private *colegios*, of which 14 are for girls; and, in the principal cities of the 6 dioceses, there are so-called *seminarios conciliares*, in which, besides theology, mathematics and law are taught. There is, also, in Lima a military school, a school of navigation, and a school of midwifery.—See Le Roy in Schmid's *Encyclopädie*, art. *Südamerica.*

PESTALOZZI, Johann Heinrich, one of the greatest of modern educators, was born Jan. 12., 1746, at Zürich, Switzerland, and died at Neuhof, Febr. 17., 1827. As he lost, when only six years old, his father, who was a physician of modest means, his training depended chiefly upon his mother. Even in early youth, Pestalozzi evinced those characteristics which distinguished him through life—piety, sympathy for the poor and degraded, a love of children, and an uncompromising sense of justice. In compliance with the wish of his grandfather, who was a Protestant clergyman, he studied theology; but his very first effort at preaching proved such a decided failure, that he turned directly to the study of law. About this time (1764), Rousseau's *Émile* fell into his hands, and gave him the hope that his longings for the improvement of his country's lower classes could be successfully satisfied. He had come to realize that the principal cause of the misery of the multitude was their ignorance, which prevented a proper and advantageous use of the political rights they enjoyed. His fundamental conclusion, therefore, was, that where the masses are stupid and brutalized, democracy can produce no blessings; and, hence, that his first effort should be to aid in the rearing up of good citizens, the preparing of devoted hearts and manly intellects for his country. He proposed to effect this result not simply by instruction but by a judicious blending of industrial, intellectual, and moral training. He rightly saw that it was not enough to impart instruction to children, but that their moral nature should be particularly cared for, and habits of activity instilled into them through agricultural and industrial labors. To his way of thinking, the great drawback on the side of industry was the weakening of the natural affections and the development of the mercantile spirit, without having the moral resources and consolations afforded by rural occupations. He, therefore, preferred to withdraw to a farm, there to gather about him the children of the poor, and to foster, in the coming men and women, the taste for domestic life and the sentiment of human dignity. Previous to the purchase of land in order to put his scheme into practice, he retired to the estate of a friend, celebrated for his improved methods of cultivation, and there prepared himself for his new task with his usual zeal. In 1769, he bought a tract of about 100 acres, and named this possession Neuhof. In the same year he married a lady of means and culture. By 1775, the place was ready for the realization of his projects. He opened what may be considered the first industrial school for the poor. He gathered about him a number of ragged and half-starved children, and lived with them the life of the poor, in order to teach them, in their poverty, how to become active members of the great human family. He soon found, however, to his great sorrow, that these vagabond children could never be made to accommodate themselves to the laborious and regular life he desired, as long as their parents were not far removed; for the latter had but too frequently encouraged vagabondage as a source of income. In 1780, his own straitened financial circumstances obliged him to abandon the enterprise. His experience he embodied in the publication *Evenings of a Recluse* (1780), which proves that, in the midst of his failures, he had profited by important discoveries in the realm of human knowledge, and in the principles which underlie all true processes of education,—results which have transmuted his individual disappointments and failures into blessings for the world. He published, in this little treatise, a programme for his future exertions, surveyed the mode of life of the people, and laid bare their deficiencies, indicating the only remedy; namely, a return to nature and to truth. The general favor with which his views were received induced him to follow with other writings in their advocacy. Of these publications, his *Lienhard und Gertrud* (Basel, 1781—9, 4 vols.)—a popular tale, presenting a picture of exalted virtue in the midst of crime and error—created quite a sensation. It circulated far and wide, and was translated into many languages. The government of Bern decreed him a gold medal, which he was afterward obliged to turn into money to supply his family with the necessaries of life. Not until 1798, did Pestalozzi's opportunity come again to put his theories into practice. In this year, his friend Legrand, one of the Swiss Directory, appointed him to establish an orphan school at Stanz, in the canton of Unterwalden. The French revolution had given rise to turbulence and anarchy. Stanz had been sacked by the French troops, and stood in flames. Thousands were homeless. Many a child saw itself bereft of parents and friends. Of such children, Pestalozzi gathered eighty in the Ursuline convent, which had been spared; and alone (his wife having remained at Neuhof) he cared for them, lived, played, and prayed with them, and earnestly instructed them. He "manifested an amount of vigor, self-forgetfulness, and enthusiasm such as the world has seldom seen combined in the soul of one frail mortal" (*Krüsi*). "I had to act," says he himself, "amidst a confusion of elements, and amidst unbounded misery; but the zeal that urged me on to seize the possibility of realizing, at last, the dream of my entire life would have transported me to the summit of the highest Alps, and through air and fire." His aim was to impart to the school the character of a family. Being without books and without apparatus, he directed his whole attention to those natural elements which are found in the mind of every child. He taught numbers, instead of figures; living sounds, instead of dead characters; deeds of faith and love, instead of abstruse creeds; substance, instead of shadow; realities, instead of signs. His main object seemed to be, to ascertain the kind of instruction most needed by the children, and how to base it upon their previous knowledge. When he saw them interested, he pursued the same topic for hours, and left it only when the interest flagged or the point was gained. He gave them no lessons to commit to memory, but always something to investigate. They gained little positive knowledge, but their love of knowledge and power of acquiring it increased daily. Being without assistance, he was driven by necessity to set the elder and better-taught scholars to teach the younger and more ignorant; and thus he struck out the mutual instruction system, which, about the same time, Lancaster (q. v.) was, under somewhat similar circumstances, led to adopt in England. At the end of a single term, the result of this course of instruction was manifestly great. The children had improved so much, both physically and morally, that Pestalozzi said: "They seemed entirely different beings from those I had received six months before, neglected, ragged, and filthy." But yet the troubles of that agitated period would not allow him to continue his benevolent labors. Already, in 1799, the orphan house was converted into a military hospital, and Pestalozzi left Stanz. A vacancy in a school at Burgdorf, in the canton of Bern, was offered him shortly after, and he promptly engaged to fill it, though a very inferior position for a man who had made all Europe talk about his theory of education. But, even from this humble position, he was dismissed in a very short time, the head-master perceiving that Pestalozzi had succeeded in gaining the attention and affection of the children in a higher degree than he himself. Fortunately, another school in the town, taught by an old dame, made room for him; and, in this obscure place, he taught until the vacant *château* was placed at his disposal for the establishment of a normal school. Several well-known educators, Krüsi, Tobler, and Buss, joined him in the enterprise; and it was not long before the celebrity and success of the school led the government to adopt and support it. In 1803, when the castle was needed by the Bernese authorities, Pestalozzi was assigned a deserted monastery in München-Buchsee, near Hofwyl, and was invited to co-operate with Fellenberg (q. v.), who had sustained a similar establishment at that place for nearly 20 years. The two educational reformers failed, however, to agree in plans; and Pestalozzi was, in 1805, permitted to occupy the vacant castle of Yverdun, canton of Vaud. There he met with his greatest success. Celebrated men and women of the refined nations of the world visited the institution, and went away speaking only words of praise. His corps of instructors had been strengthened, from time to time, until it contained 22. Among the pupils of Yverdun, nearly every nation of Europe was represented. Many of the students were of mature mind, and were graduates of other schools. The school was, of course, a home. The pupils were made to rise early, their food was good but plain, and special attention was paid to physical exercise. The contemplation of nature and her laws was regarded as first in the curriculum of study, and from it a basis was secured for formal exercises in language and composition. According to Pestalozzi's plan, composition comes before analysis, and the use of language before rules. Mathematics was the branch in which the pupils made the greatest progress; and that because the science of numbers could be most easily brought within the laws of progressive development, which form the basis of the Pestalozzian philosophy. His principle was: "The organism of the human mind is subject to the same laws that nature universally observes in the development of her organic products." Hence, he founded all knowledge on perception, and demanded that, by a progress as uninterrupted as possible, and with a constant incitement of the pupil to self-activity, he should be made to advance from what had been already acquired by him to higher results, these results being arrived at as consequences following from what had been previously established. Objects themselves became, in Pestalozzi's hands, the subjects of lessons tending to the development of the observing and reasoning powers—not lessons about objects. For the successful accomplishment of his purpose, he classified all science in its relation to the work of instruction, and adopted, by analogy from nature, the doctrine of *form* and *number* as universal educational means, and to these added, ultimately, that of *sound*. This continues, to our day, the guide of objective teaching, though improvement has been made in classification. He assigned to *form* the subjects drawing, writing, and geometry; to *number*, arithmetic, in all its departments; and to *sound*, speaking, reading, singing, and all the possible exercises of the organs of speech. He placed under *sound*, geography, history, and natural science; but modern object teachers have provided a special class, called that of *place*. Special attention, however, was directed by Pestalozzi to moral and religious *training* as distinct from mere *instruction*. His object was to lead the pupil to the living source from which spring humility, self-devotion, and an active striving for perfection of character. And here, too, gradation and a regard to the nature and susceptibilities of children were conspicuous features of his system. The one great fundamental principle of his pedagogical system, is the *natural, progressive, and symmetrical development of all the powers and faculties of the human being*. This great truth had long existed as an intellectual conviction in the minds of philosophers, and had even been expressed in proverbs and apothegms; but it was Pestalozzi who first showed, by natural experiment, how it might be made the basis of universal education, and the means by which humanity might be elevated. (For a criticism on Pestalozzi's system, see KRUESI, *Pestalozzi: His Life, Work, and Influence.*)

Unfortunately for the material success of Pestalozzi, dissensions arose among his teachers, in which he himself became implicated. The number of his pupils rapidly diminished, the establishment became a losing concern, and Pestalozzi was again involved in debt, which even the publication of his works in a collected form (Stuttgart and Tübingen, 15 vols., 1819—26) failed to liquidate. In 1825, he retired from his laborious duties to Neuhof, where his grandson then resided. His good wife had died in 1815; and, in great despondency and mortification, he spent his remaining days. A great many institutions bear his name; and the first centennial anniversary of his birth was celebrated, in 1846, with appropriate ceremonies, not only in Switzerland but all over Germany. At his grave, a monument was erected by the canton of Aargau. The best biography of Pestalozzi in German is that by Blochmann (1846), the latest by Morf (1864). In French, the most complete is by Chavanne (1853). In English, the latest is by Krüsi (Cincinnati, 1875).— See also BARNARD, *Pestalozzi and Pestalozzianism* (New York, 1859), and the article OBJECT TEACHING.

PHARMACEUTICAL SCHOOLS. The healing art has, for ages, embraced both the application of therapeutical knowledge and the supply and preparation of remedial agents; and, until the separation of these branches as the arts of medicine and of pharmacy, at a comparatively recent time, the history of medicine, and of medical schools and literature, embodied that of pharmacy; while, on the other hand, at an earlier period, both medicine and pharmacy were merged, to a large extent, in the pursuits and history of alchemy. Aside from the earliest traditions of the first crude stages of medical and pharmaceutical science in Egypt, at so remote an age as the 16th century B. C., as recorded in the *Papyrus Ebers*, the art of pharmacy, as a special branch of that of medicine, seems to have been first practiced among the Arabs; and establishments, recognized for the supply of remedial agents, are said to have been first instituted in Bagdad, in the year 754 A. D. The first systematic attempt at a methodical collection and classification of recognized *formulæ* is said to have been compiled by the Arab physician and philosopher Sabor ebn Sahel, in the latter part of the 9th century. In conjunction with medicine, pharmacy was first taught, as a branch of university instruction at the celebrated school at Salerno. During the following centuries, the establishing of pharmacies and measures for a legal regulation of the art of pharmacy extended into western Europe; and the newly established universities became centers of research and learning. Yet the absorbing problems of the transmutation of base metals into gold, and of the existence of a universal remedy, potent to avert disease, to heal sickness, to maintain or restore youth, and to prolong life, for centuries engaged the aims and inspired the efforts of the wisest and most learned men, in a search throughout nature for the "philosopher's stone" and the "elixir of life." The long pursuit of these phantoms, and the visionary but most productive speculations of alchemy, resulted in the accumulation of a vast amount of chemical and physical knowledge, and in the most important discoveries in the domain of chemical operations, processes, and products. These added largely to the compass of the *materia medica*, and contributed much to prepare that revolution in the intellectual world, no less than in the material resources of men, which, at the close of the last century, culminated in the overthrow of old ideas and systems, and laid a foundation for the modern theories of chemical philosophy, for the subsequent wonderful strides in their practical applications to all the affairs of industrial and social life, and for their productive influence upon the advancement of physiological, pharmaceutical, and analytical chemistry.—During the struggles of this remarkable revolution, which, among its other results, separated medicine and pharmacy as independent correlative branches, the latter was the leading and most successful cultivator of chemistry, and attained at that time, and especially at the close of the last and the first half of the present century, in continental Europe, its culmination. It supplied from among its ranks the newly-created chairs both of chemistry and of pharmacy, and frequently of botany also, at the universities and special schools for medicine, pharmacy, agriculture, and kindred arts; the increasing branches of chemical industry and manufacture, too, were largely and successfully occupied and cultivated by pharmacists. Pharmacy emancipated itself more and more, in the civilized countries, from co-education with, and subordination to, medicine; special schools, or at the universities, special chairs, for instruction in pharmaceutical chemistry and pharmacognosy, were established; and both the standard of qualification and the practice of pharmacy, like that of medicine, were restricted and controlled by the state. Since the middle of the present century, by the rapid strides in the progress and application of the physical sciences, particularly of chemistry in its various relations, the position of pharmacy has somewhat changed. Chemistry has risen to a commanding station among the physical sciences, and in the industry and wealth of nations; its application in the manufacture and supply of all chemical products cheaply on a commercial scale, has largely deprived the pharmacist of one of the original and most important and instructive objects of his pursuit, — the preparation of medicinal chemicals and many of the pharmaceutical products. On the other hand, pharmacy is losing scope by the decrease in the use of medicines, in consequence of the general increase of hygienic knowledge, and the progress of medical science. The former pre-eminently professional character of pharmacy has, in consequence, gradually given way to a more mercantile and trade aspect. But, notwithstanding the diminution of its resources and of its former scope of application, the requisite standard of proficiency is, as yet, every-where maintained; and, in countries of a growing civilization, pharmaceutical education is continually and correspondingly raised. Most countries, therefore, at present, either have special schools for the higher education of pharmacists, or else afford instruction in the pharmaceutical branches at universities, or medical or technical institutions.

In the amount of the preparatory education required, the high standard of scientific and practical qualification, and the restrictions enforced by law and controlled by the government, Germany ranks highest. The candidate for apprenticeship must have attained maturity for the second class (*Ober-Secunda*) of the gymnasium, or must have passed through a real school. The apprenticeship must last three years; during which time the pupil's progress, and the obligatory instruction by his master, are controlled by annual examinations by a delegate of the district government. At the close of the apprenticeship, and after successfully passing an examination before a board, also appointed by the district government, the candidate has to complete his practical experience by serving for three years more as clerk; and he is then entitled to enter upon the obligatory course of university study at any one of the 20 German universities. He is free to attend such lectures as he may choose; and, at the close of each lecture term, he may select another university, according to his option; while the state requires, with uncompromising severity, the satisfactory passage of a comprehensive final examination. To this the student is only admitted after having attended the lectures and laboratory instruction for at least three lecture terms (1½ years); and, upon passing it, the state grants him a license for the practice of pharmacy throughout the empire. Many graduates choose to acquire, by a continuation of university and laboratory studies, and by the subsequent passage of an examination before the philosophical faculty of a university, the degree of Ph. D.—Similar, and nearly equally strict, is the course of pharmaceutical education and qualification in Austria, Hungary, Russia, Switzerland, Sweden, Norway, and Denmark; but somewhat less strict in Roumania, Italy, and Greece. In France, pharmaceutical education is controlled by the state so far that students, after a more or less brief experience in drug-stores, have to attend, for one or two years, the lectures at one of the pharmaceutical schools at Paris, Nancy, or Montpellier, or at the medical and pharmaceutical schools at Nantes or Marseilles, and subsequently must pass an examination. Upon the satisfactory passage of this, the student receives, according to the time of his study and the price he is able to pay, the diploma as a *pharmacien* of the first, or of the second class. The former is entitled to establish himself indiscriminately, while the latter is allowed to do so only in small cities. The standard of pharmaceutical education is somewhat higher in Belgium and the Netherlands, but perhaps less strict in practical proficiency. The student has first to attend lectures, and then to attain skill and experience in pharmacy, when he is admitted to examination and subsequently to practice. In Spain and Portugal, the course of pharmaceutical education, and the qualification required on the part of the state, seem to be similar to those in France. The three Spanish universities in Madrid, Barcelona, and Granada, and the medical schools at Lisbon, Oporto, and Coimbra, in Portugal, afford lectures to pharmaceutical students. Education in this department, in Turkey, while it is not uniformly obligatory, embraces an apprenticeship of three years, and a subsequent attendance upon the lectures at the Imperial Institute, in Constantinople, which also has the direction of the examination, and grants licenses to those who apply for and pass it successfully. In Great Britain, the state has exerted an obligatory influence on the qualification of pharmacists since 1868; but it leaves this control to the Pharmaceutical Society of Great Britain, and to the Privy Council. The only restriction consists in a registry statute, requiring two successive examinations: a preliminary one for registration as " apprentice or student", and a minor examination, for a license as "chemist and druggist", or a major examination for a license as "pharmaceutical chemist." The state of pharmacy, and the standard of pharmaceutical education, in the various countries of Spanish and Portuguese America, is comparatively little known. In several of them, as for instance, in Mexico, Brazil, Peru, and others, the state exercises a more or less strict, although not uniformly efficient, control; while, in other states, either the qualification for the practice of pharmacy is not restricted, or the control is more nominal than real. Pharmaceutical education and practice in Canada stand in close relation to those of Great Britain and the United States.

The standard of pharmacy and pharmaceutical education in the United States is not uniform, because it is not obligatory; and until recently it has been left entirely to individual option and efforts. While sporadic attempts toward some kind of legal regulation have mostly failed of virtual effect, yet a strong and increasing body of accomplished pharmacists, largely strengthened by the immigrated German element, has grown up; and, by its influence and efforts, has contributed gradually to raise the standard of pharmacy, and to attain, in several states, and in a number of the largest cities, some authoritative control of the qualification of pharmacists. Chartered local associations (colleges of pharmacy) have been established in these cities and states, and they have, in pursuit of their aims and objects, founded schools of pharmacy. Chartered schools of pharmacy were in existence, in 1876, in the following cities: Philadelphia (founded in 1821); New York (1831); Baltimore (1855); Chicago (1859); Boston (1867); Ann Arbor (1868); Cincinnati (1870); St. Louis (1871); Louisville (1871); San Francisco (1872); Washington, D. C. (1873); Nashville (1873). These institutions grant, upon their own mutually recognized authority, diplomas with the degree of Graduate of Pharmacy, to those candidates, without regard as yet to their preliminary education, who have had experience in drug-stores for four years, have attended at least two courses of lectures at one of the pharmaceutical schools, or at some medical or kindred college, where chemistry, chemical analysis, botany, pharmacognosy, and practical pharmacy are taught, and who subsequently have passed a satisfactory examination before a board of trustees of the College of Pharmacy. The colleges and schools of pharmacy in the United States have thus far acted harmoniously in their voluntary and successful efforts for a gradual and uniform elevation of the scope and the standard of education and proficiency among pharmacists. The most serious drawback to general and permanent results consists in the absence of any authoritative national or state restriction and control of the practice of pharmacy, and in a consequent excessive and detrimental overcrowding of the profession, and for causes previously stated, in a general decrease in the compass of legitimate application, and in the resources and material prosperity of the art of pharmacy.

PHILADELPHIA, the chief city of the state of Pennsylvania, and the second in population in the United States, the number of its inhabitants, in 1870, being 674,022, and the estimated number, in 1876, 750,000.

Educational History.—The first school opened in the city of Philadelphia was the private English school of Enoch Flower, in 1683. Recommendations in favor of education had been previously made by William Penn, but had not been acted on. In 1689, the Society of Friends established a *public school*—not public, however, in the modern acceptation of the word, since it was founded "at the request, costs, and charges, of the people called Quakers." This school is still in existence. In 1750, a charitable school for young men was founded by Franklin; and, by 1752, the number of schools in the colony of Pennsylvania—and probably, therefore, in Philadelphia—must have considerably increased, as the legislature, in that year, found it expedient to appoint trustees and managers for them. The provisional constitution of the state, adopted in 1776, declares, in its 44th section, that "a school shall be established in each county by the legislature, for the convenient instruction of youth, with such salaries to the masters, paid by the public, as may enable them to instruct youth at low prices;" but no immediate steps appear to have been taken to make this provision of any practical value. In 1786, a tract of 60,000 acres of land was set apart by the legislature for the public schools of the state; and the 7th section of the constitution of 1790 provides that "the legislature shall, as conveniently as may be, provide by law for the establishment of schools throughout the state, in such manner that the poor may be taught *gratis.*" The dissatisfaction, however, caused by this law, rendered it inoperative for several years. In 1809, another act for the free education of the poor was passed; but the same dissatisfaction caused the law to remain a dead letter, the rich objecting to being taxed in behalf of the poor, and the poor being too proud to accept as a gift the education of their children. These objections on the part of the two classes appear frequently in the early legislation of the colonies in regard to free public schools. When it became apparent that the law of 1809 was of no practical value, a supplement was procured in favor of the city of Philadelphia, by which the commissioners of Philadelphia County, with the approval of the councils and commissioners of districts, were directed to establish public schools. Under this system, 2,000 children received instruction in 1816, at an expense of $23,000. Serious objections to this system, however, were made, on account of its class distinctions, and its want of economy, which resulted in the formation of the Society for the Promotion of Public Economy, of which Roberts Vaux was chairman. In 1818, this society, both composed of, and aided by, the ablest and most influential citizens of Philadelphia, procured the passage of an act which provided for the free education of all the children of the city, and which did not contain the objectionable features of previous acts. This erected the city and county of Philadelphia into a separate school-district, each district of the city being denominated a section. Sectional directors were appointed by the several councils, as well as controllers, one from each section, to be known as the Board of School Controllers. Of this board, Roberts Vaux was the first president. This act is generally regarded as the foundation of the present common-school system of Philadelphia. It applied, however, to that city alone; and the people, failing to discriminate between its provisions and those of the law of 1809, which was still in force in the remainder of the state, included them all in their condemnation. The friends of the Philadelphia law, therefore, formed an association known as the Pennsylvania Society for Promoting Public Schools, with branches in various parts of the state; and determined, if possible, to procure the passage of a new common-school law, which should extend the advantages of the local law over the state. This was accomplished in 1834, when a general law was passed providing for the free education of all persons in the state between the ages of 6 and 21 years. Faults were soon found, however, with the practical operation of this measure; and attempts were made to repeal it, but failed, owing largely to its able advocacy by Thaddeus Stevens, then a member of the legislature. In the session of 1835—6, an improved law was passed, after an animated contest in the legislature, and remained in force substantially till 1854. Shortly after the establishment of the schools on a permanent basis, it was discovered that the elementary character of the instruction given was inadequate to the wants of the city. In 1838, accordingly, the Central High School was opened, with 4 teachers and 63 pupils. This was followed, in 1840, by the establishment of the Girls' High and Normal School, an institution which, in 1875, reported an average attendance of 641 students. The growth of the schools is best shown by the following figures: attendance in 1820, 5,369; in 1830, 5,371; in 1840, 23,192; in 1850, 48,056; in 1860, 63,530; in 1870, 82,891; in 1875, 95,552.

School System.—The city constitutes one school district, known as the First School-District of Pennsylvania. The control and management of the public schools is intrusted to a *board of public education* consisting of 31 members, one from each ward, with a subordinate board for each ward. The members of the board are appointed for 3 years by the judges of the court of common pleas, and of the district court. They exercise a general supervision over the common schools, making such rules for their own government and for that of the schools, as they deem expedient. They appoint a secretary and an assistant secretary, whose powers are limited. There is no city superintendent. The schools are supported by a city tax. They are divided into primary, secondary, grammar, and high schools; and it is claimed that this distinction was first made in Philadelphia. There are, also, consolidated schools and night schools. The number of the schools, in 1875, was 224 primary, 127 secondary, 29 consolidated, 63 grammar, and 2 high schools.

The principal items of *school statistics* are as follows:

Total attendance in 1875		95,552
Average " " "		82,975
Number of teachers, males	77	
" " females	1,801	
Total		1,878
Receipts		$1,646,929.39
Expenditures		1,634,653.26

The studies, taught in the primary schools, are, reading, spelling, penmanship, arithmetic—mental and practical—and music, accompanied by exercises in dictation, object lessons, and gymnastics, and by instruction in morals and manners. To these are added, in the secondary schools, articulation and pronunciation, drawing, composition, definitions, and geography, and a general review of the studies pursued in the previous grade. The studies peculiar to the grammar schools, are grammar and history, with instruction in, and reviews of, previous studies. Pupils from the grammar schools are admitted to the Central High School and to the Girls' Normal School semi-annually, upon a satisfactory examination by a committee of principals of the boys' and girls' grammar schools. The Central High School, in addition to the studies usually pursued in schools of this class, gives instruction in Latin, German, the natural sciences, the higher mathematics, and mental and moral philosophy. It is authorized to confer upon all students who complete the 4 years' course, the degree of Bachelor of Arts, and that of Master of Arts upon all graduates of not less than 5 years' standing who shall be entitled to it. The number of students in attendance, in 1875, was 601. The Girls' Normal School grants diplomas to its pupils at graduation. The average number of students in attendance, in 1875, has been previously stated to be 641; the number in its graduating class was 135. Annual examinations of applicants for the position of teacher, or special examinations, when necessary, are held by a committee of the board of education, assisted by principals of grammar schools and members of the faculty of the Central High School. Two grades of certificates —principals' certificates and assistants' certificates—are issued, the first, to persons not under 20 years of age who pass a satisfactory examination in the studies prescribed by the board; the second, to persons not under 17 years of age who obtain, in the same studies, a stated average somewhat less than that necessary for the position of principal. The holder of a principal's certificate is immediately eligible to any position lower than that of principal; and, after one year's teaching, is eligible to the position of principal of a primary school; after 2 years' teaching, to that of a secondary school; and, after 3 years' teaching, to that of a grammar school. The holder of an assistant's certificate may hold the position of assistant in any public school; and, after 3 years' teaching, may become principal of a primary or secondary school. Principals and assistants' certificates are also issued to the graduates of the Girls' Normal School. The number of public evening schools opened in 1875 was 47,—20 for males, 11 for females, 10 for both sexes, and 6 for colored people (both sexes). They remained open 4 months, the aggregate number of pupils being 14,443; the number of teachers, 226. Three important events, occurring in 1875 in connection with the common-school system of the city, may be mentioned. The first was the offer of the trustees of the University of Pennsylvania to receive into its scientific department annually, for a four years' course, 10 pupils from the public schools free of expense. The second was a similar offer from the directors of the Philadelphia School of Design—10 female pupils being offered free instruction in art for the prescribed course, of 4 years. The third event of importance was the examination made, during the summer, by a committee of the board of education and a corps of scientists, into the sanitary condition of the schools of the city. The results of their inquiries have been arranged in tabular form, and published; and, bearing as they do upon the schools of other cities and states, cannot fail to be of permanent interest and value. The number of private, denominational, and parochial schools in Philadelphia is very large; but no statistical report of their number or resources is attainable. The institutions for higher, professional, scientific, and special instruction are, also, numerous, chief among which may be enumerated, in addition to those given under the title Pennsylvania (q. v.), Girard College, which, though not, strictly speaking, an educational institution of a superior grade, but an orphan asylum, provides an 8½ years' course of study for the children and youth under its care; the Polytechnic College, incorporated in 1853; the Franklin Institute; the Wagner Free Institute of Science; the Divinity School of the Protestant Episcopal Church; the Evangelical Lutheran Theological Seminary; the Jefferson, the Eclectic, the Hahnemann, and the Women's Medical colleges; the Pennsylvania College of Dental Surgery; the Philadelphia Dental College; and the Philadelphia College of Pharmacy. There are, also, a philosophical and a historical society, academies for science and art, and many libraries.

PHILANTHROPIN, or **Philanthropinum,** the name of an educational institution, founded in 1774, by Basedow (q. v.). It soon became so famous that its admirers, who were called Philanthropinists, expected from it an entire regeneration of educational systems, and founded numerous schools, in imitation of it, as a model. Most of these were short-lived, that founded by Salzmann (q. v.), at Schnepfenthal, alone maintaining itself until the 19th century. Some of the principles and practices on which the Philanthropinists laid great stress, have been generally abandoned by modern educators; others have quite commonly been accepted, and have contributed to the progress made by the science and art of education in our days.—See QUICK, *Educational Reformers* (Cinc., 1874).

PHILOLOGY. See LANGUAGE.

PHONETICS (Gr. φωνητικά, from φωνή, voice), a term used to denote not only the science of voice-sounds (*phonology*), but the arts of *phonotypy* (printing words by their sounds), and *phonography* (writing words by their sounds). It is also used to designate phonetic teaching, or the practical application of phonetics. In all these cases, the use of the term *phonetic* as an adjective is more common; as, *phonetic science*, *phonetic print*, *phonetic writing*, and *phonetic teaching*. In this article, these will be severally treated in the order here enumerated.

I. *Phonology*, or *phonetic science*, is, properly, a branch of the science of *acoustics*, which embraces a consideration of the sounds used in speech, as well as those used in singing, and in other departments of music. Phonology is related, on the one hand, to *physiology*, as far as the organs of speech, and their action, are concerned; and, on the other, to *philology*, being now recognized by the most eminent philologists as lying at the very foundation of that science, and hence of much greater importance than any mere orthographic etymology can be.—This subject can be best presented and understood by approaching it from the side of our own language, and considering the elementary sounds of that language in their natural order and relations. This will lay a good foundation for the study of general phonology, and for a comparison of the sounds of all languages. The English language contains nearly all the sounds needed for a full outline of phonology; and, moreover, in Webster's and Worcester's dictionaries (now very generally accepted as standards of reference,—in the United States, universally adopted as such), there is to be found a complete analysis of these sounds—one in which they fully agree, though neither presents them in their natural order, giving them merely as the particular sounds of the letters. In arranging them according to the latest results of phonetic science, we may take these distinctions as we find them in the dictionaries, where they are correctly made: (1) the sixteen simple vowel sounds heard in the following words: f*a*te (same as *ei* in *veil*), f*a*t, c*a*re, f*a*r, *a*sk, *a*ll, wh*a*t (same as *o* in *not*); mete (same as *i* in *pique*), met, f*i*n, n*o*te, wh*o*le [recognized as an English sound, but not sanctioned in orthoëpy], r*u*de, p*u*ll, *u*s, *u*rn. These naturally arrange themselves in the following order, with the addition of *ü* and *ö* from the German to complete the scale:

VOWELS.

	Full Vowels. Long, when accented. Brief, when unaccented.			**Stopped Vowels.** *Staccato* or exploded. Always short in English.		
	FRONT SERIES	MIDDLE SERIES	BACK SERIES	FRONT SERIES	MIDDLE SERIES	BACK SERIES
(1)	pique i	kühn ü	rude u	fin *i*	Künste u̇	pull *u*
(2)	veil e	Goethe ö	note o	met *e*	Boecke ȯ	whole *o*
(3)	care æ	her ə	all ɒ	fat ɐ	us *ə*	what *ɒ*
		far ɑ			ask *a*	

Diphthongs.

my	oil	out	tune	use
ʌ	*ɒi*	*ɒu*	*iu*	· ɥ

The full and stopped vowels occur in pairs, and in three corresponding series, as shown in the following table:

pique fin	kühn Künste	rude pull
i *i*	ü u̇	u *u*
veil met	Goethe Böcke	note whole
e *e*	ö ȯ	o *o*
care fat	her us	all what
æ ɐ	ə *ə*	ɒ *ɒ*
	far ask	
	ɑ *a*	

No distinction is made in these tables between the sound of *e* in *term* or *i* in *girl*, and that of *u* in *urn* or in *furl*. These sounds, however, though kindred, are distinguishable, and are so marked by Webster, who says, "The vulgar universally, and many cultivated speakers both in England and America, give the *e* in such words the full sound of *u* in *urge*, as murcy for *mercy*, turm for *term*, etc. But, in the most approved style of pronunciation, the organs are placed in a position intermediate between that requisite for sounding *u* in *furl* and that for sounding *e* in *met*, thus making (as Smart observes) 'a *compromise* between the two'." The vowel sounds, as arranged in the above tables, may be thus described. Starting from the fundamental sound, *a* in *far* (or *a* in *ask*), they branch upward in (1) a front series, with the tongue rising upward and forward, to i in *pique*; (2) a middle series, with the tongue rising to ü, directly upward, and not pushed forward or backward; and (3) a back series, with the tongue rising upward and backward to u in *rude*. The succession in the order of the sounds as judged by the ear, corresponds to that of the movements of the tongue, as perceived by the muscular sense. The diphthongs are arranged below the simple vowels according as they terminate in the upper front vowel i or the upper back vowel u. The relations of the full and corresponding stopped vowels to each other, as affected by quantity, may be further studied by the aid of the following arrangement of words, in which they respectively occur in accented and unaccented syllables (the double letters indicating prolonged sounds):

eat ii	eternal i	kühn ü	Künste u̇	prude uu	prudentia u
ii	it *i*			*uu*	wood *u*
mate ee	maternal e	Goethe ö	Böcke ȯ	oak oo	location o
ee	met *e*			*oo*	spoken *o*
care ææ	clairvoyant æ	cur əə	curtail ə	aught ɒɒ	authentic ɒ
ɐɐ	carry ɐ	*əə*	curry *ə*	*ɒɒ*	not *ɒ*
		part ɑɑ	partake ɑ		
		aa	ask *a*		

It may be observed that the stopped vowels do not, and cannot, rise quite so high in the scale as their corresponding full vowels; but this difference is reduced to a minimum in the fundamental pair, ɑ *a*, and in the lower front pair, æ ɐ.

The following is a synoptical arrangement of consonant sounds, some German sounds being added. [*a*, indicates aspirates; *t*, subtonics; *n*, nasals; *l*, liquids; *v*, vowel consonants]:

CONSONANTS.

	LIP	LIP-TEETH	TONGUE-TEETH	TIP-TONGUE	TOP-TONGUE	ROOT-TONGUE
(*a*)	up p			tone t	chin ch	cat c
(*t*)	be b			do d	jar j	get g
(*a*)	von 𝔳	if f	thin th	us s	she sh	ich 𝔠𝔥
(*t*)	wie 𝔴	veil v	this dh	zone z	usual zh	Tag 𝔤
(*n*)	me m			no n	señor ñ	sing ng
(*l*)				let rare l r ɹ		
(*a*)	what hw					he h
(*v*)	we w				ye y	

For an account of the development of the present method of indicating these sounds in the

English language, the reader is referred to the article on ORTHOGRAPHY.

II. *Phonetic Print.*—The elementary sounds of the English language are usually represented in dictionaries by diacritical marks; but various methods of phonotypic notation, other than this, have been employed. That of Dr. Edwin Leigh has been extensively used for school purposes, and has attained a considerable degree of popularity. An ingenious system of representation approximating to the diacritical, is used in Shearer's *Combination Speller* (New York, 1874). The notation employed in the above vowel and consonant scales, using only the common letters of the alphabet for temporary and critical use, is in substantial accordance with the plans of Dr. Thornton (1790), of the Dutch alphabet, of Mr. Ellis in the *Alphabet of Nature* (1844), and *Palæotype* (1868), of Prof. Haldeman (1860), and of S. P. Andrews (1876). It is not inconsistent with those of Pickering, Lepsius, and others, which have been used in printing Asiatic and new languages. It harmonizes these various plans, and is in very exact accordance with a phonotypic plan that is, perhaps, as good as any yet proposed, and has, moreover, a good and facile script corresponding to both.

III. *Phonography*, or *phonetic writing*, in its more general sense, would include any script in which the letters are used to denote sounds; but it is now appropriated, in a special sense, to Pitman's particular system of phonetic short-hand. For an account of various efforts to construct a phonetic long-hand script, for the English and other languages, see the publications of Isaac Pitman and Elias Langley. For a history of short-hand (*stenography*), see a valuable treatise by Mr. Pitman published in connection with his "*Fonotypic Journal*," in 1847, in which he describes 120 systems, and gives the alphabets of 86 A-B-C systems, from that of Tyro—Cicero's freedman—(B. C. 60), down to those of Gurney (1753), Byrom (1767), Taylor (1786), Mavor (1789), Lewis (1815), and Floyd (1818); giving, also, specimens of passages written in the seven most successful systems, and adding the alphabets and specimens of the seven phonetic systems from Tiffin (1750) to Sproat (1846).—Pitman's phonography was invented in 1837, and so thoroughly matured by its author before 1844, that its main features remain unchanged; though, with the co-operation of leading phonographers in England and America, some of its minor details have been improved or modified. It can be studied in Pitman's manuals, especially those of 1860 and 1865; or as it appears in the text-books of Andrews and Boyle (Boston, 1846); Langley (Cincinnati, 1851), Graham (N. Y., 1858), Ben Pitman (Cincinnati, 1855), Marsh (San Francisco, 1868), Munson (N. Y., 1866), and E. V. Burns (N. Y., 1872). In connection with any of these (especially those prior to 1860), Parkhurst's *Stenophonographer* (N. Y., 1852—76) can be used, and will give to the investigator, teacher, or practical reporter, the history and discussion of the various improvements, proposed or made, since 1852.—Phonography, notwithstanding its many advantages over the ordinary script, has made but little progress since that time as a general method of writing, its use, at present, being almost exclusively technical. Hence, it has not been generally introduced as a branch of instruction, except in commercial schools, or for the special purposes of preparing for the occupation of the reporter.

IV. *Phonetic teaching* now quite generally constitutes a part of the lowest grade of elementary instruction, its object being to facilitate the teaching of children to read. (See PHONIC METHOD.) By means of phonetic exercises, the vocal organs of children are trained to clearness and correctness of enunciation, while the ear is cultivated so as to be able readily to distinguish sounds. At the same time, children necessarily acquire a better idea of the use of letters and of the sounds which they are employed to denote. Most educators, at the present time, recommend this mode of teaching; although there is some diversity in the manner in which it is applied. Beginning with simple words in which single letters are used to denote simple sounds, and in which no silent letters occur, the child is led to perceive the use of the letters, and to associate with them their proper sounds, the teacher passes progressively to more complex and irregular combinations, until the pupil is able to analyze words into their component sounds, and state how these sounds are represented. After such preliminary exercises, in order that the pupil may fully understand the relations of the sounds to each other, and be systematically drilled in their utterance, all the elementary sounds must be presented synoptically. This is done by phonetic charts, which should exhibit (1) a logical enumeration of the elementary sounds, illustrated by their use in well-chosen words; and (2) the letters of the alphabet with their various sounds, and diphthongal combinations. Very many of the faults in articulation so frequently met with may be prevented or removed by persistent drilling in the elementary sounds. These phonetic drills may comprise exercises in the vowel sounds by themselves; but the consonant sounds are often most effectively practised in combinations with vowels. In teaching persons, whether children or adults, to pronounce a foreign language, this training is indispensable. Of course, it should be preceded by a careful investigation into the particular defects which constitute what is called the "foreign accent," so that the elementary sounds involved may be made the special subject of the drill. Phonetic analysis should not cease in the lower grades, but should, at every stage, constitute a part of the regular reading or elocutionary exercises. Like the fingers of the pianist or violinist, the vocal organs need constant technical exercise in order that they may perform their office most effectively. The enunciation of the open vowel sounds constitutes a most important part of vocal training. (See VOICE, CULTURE OF THE.)

PHONIC METHOD, a term applied to a method of teaching reading, in accordance with which pupils are taught, in pronouncing words, to use the sounds of the letters, instead of their names, so that they may at once perceive the result of the combination, and thus without difficulty give the correct pronunciation. For example, when the pupil is required to pronounce the word *dog*, he does not say *de-o-ge*, *dog*, but gives to each letter the proper sound, phonetically, and thus at once pronounces the word *dog* as the necessary product of the elements thus combined. This method is considered by teachers to possess many advantages over the old-fashioned way of compelling the pupils to learn the names of the letters of the alphabet, and then teaching them to read by spelling exercises. (See Orthography.)

PHONICS. See Orthography, and Phonetics.

PHRENOLOGY. See Character, Discernment of.

PHYSICAL EDUCATION may be defined as that systematic training of the bodily powers which tends to render them, in the highest possible degree, efficient in their several functions. The necessity for this training is generally acknowledged, as a basis for the higher departments of education. Among the ancients—the Persians, the Greeks, and the Romans, especially, the highest respect was accorded to physical culture; and the means employed were generally well adapted to the purpose, although merely empirical; but, at the present time, the researches of science ought to supply a far better and more accurate basis for an effective system of bodily training.—Physical education looks to two objects: (1) to encourage a normal development of bodily powers; and (2) to check morbid growth. Incidentally to these, of course, the preservation of health, that is, protection against disease, is an important object; since a condition of health is the foundation upon which all physical culture must rest; indeed, if children are successfully protected from morbid influences and disturbances, normal development must result.

(1) The application of appropriate means to stimulate or guide the development of the bodily powers constitutes what is called *physical training*. This training may be (1) general, or (2) special. Up to a certain age, all physical exercise must have for its object general development; beyond that, the special purpose of the training must dictate the nature of the exercise to be employed. Military drill, it is true, is often employed in schools to promote general development, but there is very much required in military discipline that is quite unnecessary for ordinary physical culture. The importance of systematic exercise has been considered in the articles *calisthenics* and *gymnastics* (q.v.). Such exercise, however, must not look exclusively to muscular development; but to the prompt use of muscular power in obedience to the dictates of mind. Such power systematically exercised in any given direction becomes almost automatic, as is seen in the case of the skillful oarsman, rider, or swordsman; or in adepts in athletic games, such as those of ball and cricket. All such means of physical culture become of special value, as bringing the powers of the body under the immediate control of the will; and, hence, under the name *athletics*, they have been generally encouraged by those who have the direction of superior education. In the same category, are to be placed the exercises which regard the due development of other physical powers, as the senses, the vocal organs, the lungs, and, in a closer relation to intellectual education, the brain. Educators err greatly in forgetting that the brain is a physical organ, and that its exercise is subject to the same laws and to the same limitations as other bodily organs; and that, therefore, physical considerations should have a controlling weight in determining the means and, to some extent, the methods of intellectual training. (See Brain.)—Many are inclined to regard the direction of physical training as unnecessary. They think that the physical powers of children and youth receive, in the instinctive and irrepressible exercises natural to that age, a sufficient education for ordinary purposes. From this view arises a neglect which is fraught with serious injury. Not only does the individual fail to act appropriately and energetically at every trying period of his life; but, in most cases, his action falls somewhat below what is required for effective results, through want of the full co-operation of the bodily powers; and, toward the close of life, decrepitude is accelerated by the partial atrophy occasioned by imperfect development and by disuse.

(2) To check morbid growth or to prevent disease, careful attention must be given to the surroundings of the child, particularly in school; as there he is subjected to constant restraint, and, hence, cannot exercise his natural instincts which would prompt him to escape from such surroundings. The preservation of children from morbid influences in school depends upon a great variety of circumstances, for a full enumeration of which, see Hygiene, School.—The practical aim of physical education, under the influence of modern life, is almost always intellectual. Gymnastics and calisthenics, however, indirectly exert a moral influence which, of itself, makes their practice desirable. This is that magnanimity which is produced in generous minds by the consciousness of bodily health and power, and a disposition to use that power worthily. A feeling of inferiority has always associated with it an element of immorality, which leads its possessor to acts of duplicity and meanness to preserve his equality. There is still another phase of physical education to be considered—that which relates to the joint action of the mind and body through the medium of the senses. (See Ear, Eye, and Senses, Education of.) The minute subdivision of labor characteristic of the age in which we live, by giving a utilitarian value to the cultivation of the

senses is rapidly constituting this an element of increasing importance. Already, the success of numerous trades and employments is dependent upon a nicety of discrimination by means of the eye, the ear, the taste, or the touch; and the number of these is steadily increasing. The cultivation of the senses, therefore, is desirable from a merely utilitarian point of view; while for general culture, such as is required in many of the arts, its absolute necessity is manifest. Many considerations and interests, therefore, conspire to make the subject of physical education one of constantly increasing importance.

PHYSICS. See SCIENCE.

PHYSIOLOGY (Gr. φύσις, nature, and λόγος, discourse), the science which treats of vital phenomena—as contradistinguished from *anatomy*, which treats of the structure of living bodies and the materials of which they are composed. In the course of education, it presupposes some preliminary knowledge of chemistry, physics, anatomy, and especially of microscopic anatomy, or histology; and, in turn, it precedes the study of hygiene, or the laws of health, and that of pathology, or the science of abnormal function. As a science, physiology is of recent origin; though the name has been in use from antiquity. Like all other natural sciences, as Dalton observes, "there is only one means by which physiology can be studied; that is, by the observation of nature." It has been built up by experiment; and many of its most essential truths, and these in their practical results the most important to mankind, have been gained through vivisection. As the principal foundation of hygiene, it is obvious that its principles should be so far made an element of general education as may conduce to a just appreciation of nature's sanitary code. How this may best be accomplished is a question that has hardly received the attention it deserves. School physiology, in many cases, consists of a smattering of anatomy; in others, of a still more unsubstantial fabric of information regarding function; or, in still others, of a blending of the two with hygienic doctrines, often based not on a wide conception of biological truths, but on the meager knowledge gained by personal experience. The difficulty has always consisted in attempting to build upon too narrow a foundation, and that by means of an erroneous method. Thus, the attempt is made to teach the elements of physiology without a sufficient groundwork of chemistry and physics, and exclusively from books, instead of from practical experience in the laboratory. The results have been—as those of book learning and lecture teaching in natural science, without observation and experiment, always must be—unreal and evanescent; hence, by such instruction the true nature of vital phenomena is never clearly apprehended; and the hygienic deductions are, of course, correspondingly illogical. Doubtless, a great amount of knowledge has been imparted, in these later days, to the people in general on this subject; but the advance that has been made in sanitary practice is, probably, due not so much to the results of school education, as to the improved education of medical men, and to their advice spoken and written to communities, learning by practical experience the penalty of infringing hygienic laws. The real requisite in general education on this subject, appears to be, that, when a sufficient foundation has been laid, a practical course of biology should be employed to elucidate the general laws of life; and then the habit of scientific thought and reasoning, formed by such training, will lead to a correct application of general principles to the special conditions of human life. Some such course of biological study as *A Course of Practical Instruction in Elementary Biology*, by Huxley and Martin, might properly form a part of the curriculum of every collegiate institution; and, in all schools of a lower grade, as much preparation should be made for such a course as is practicable. Objective teaching, in outline, of anatomy, by the dissection of the lower animals, accompanied by such simple practical suggestions as arise from the interpretation of the mechanical arrangements of the body, may be early commenced; but, in all cases, this foundation should be laid systematically, with a definite end in view, and by instructors who have qualified themselves to teach, by following a complete practical course, such as is above suggested. Teaching merely from text-books and by pictures, will be almost useless, because superficial; and no demonstrations, even from the best models, can ever be so effective as those from actual dissections of the lower animals. A pupil will gain a better idea of the appearances presented by his own organs, and of their own relations to one another, from seeing a demonstration of those of a rabbit or a dog, for example, than from any rigid, and necessarily unreal, model, however skillfully constructed and colored. Such models, however, admirably subserve secondary demonstrations. The educator who contemplates laying a foundation for physiology should refer to *A Course of Elementary Practical Physiology*, by Foster and Langley—a work intended to succeed that of Huxley and Martin, above mentioned. From this guide to laboratory work, he will learn what physiological investigation implies and requires; and he will realize upon what basis rests the information contained in the re-organized physiological text-books; such as Dalton's *Treatise on Human Physiology*, Flint's *Physiology of Man*, and the more reliable of school physiologies, such as Huxley's *Elementary Lessons in Physiology*, and Dalton's *Treatise on Physiology and Hygiene*, and Draper's *Anatomy and Physiology*. To aid him in demonstrations of the dissections of the lower animals, he should have at hand a trustworthy treatise on human anatomy, such as Morrell's *Student's Manual of Comparative Anatomy and Guide to Dissection*, and Mivart's *Lessons in Elementary Anatomy*. Every teacher should, also, be familiar with Carpenter's *Principles of Mental Physiology;* also, by the same author, *Principles of Comparative Physiology*, and *Principles of Human Physiology*. (See SCIENCE.)

PIARISTS, or **Fathers of the Pious Schools,** a religious order in the Roman Catholic Church, the members of which are specially devoted to the gratuitous instruction of youth. This order was founded by Joseph of Calasanza, or Calasantius, a Spanish priest, by the opening of a free school, at Rome, in 1597. A large number of children were soon gathered in this school, under the instruction of Calasanza and his associates; and, by a decree of Paul V., the association assumed the rank of a religious congregation. Soon afterward (1622), it was made a religious order, Calasanza being its first general, and soon spread through Germany, Poland, Italy, and some other countries. In 1860, the Piarists had 33 houses in Germany, 28 in Italy, 32 in Hungary, 14 in Poland, and at least 30 in Spain. In Italy, they have since been suppressed; and the only country in which they conduct, at present, educational institutions of note, is the Austro-Hungarian Monarchy. In Cisleithan Austria, in 1870, they had 29 houses, with 297 members; included in which were 4 under-gymnasia. (See ROMAN CATHOLIC CHURCH.)

PICTURES. One of the earliest efforts of the human mind, after spoken language, appears to be the communication of ideas by tangible objects. The use of pictures and images is common among savages every-where. It is no less characteristic of the infant mind among civilized races, children being not only interested in looking at pictures, but, by a natural prompting, attempting to imitate them. The first ideas which the child takes from objects being concrete, its means of expressing them takes the concrete form—its first effort being, as near as possible, a reproduction of the objects themselves. Not till a higher development has been reached, is it fitted to make use of a system in which purely arbitrary forms are employed. This early and almost universal instinct, therefore, involving, as it must, the ability to understand ideas so communicated, suggests the peculiar fitness of this method for use in the instruction of children. This form of expression being attended with so much pleasure, it finds its natural place in the kindergarten system; and we find, accordingly, various exercises there for the employment of it. It is even extended into the ordinary school system in the shape of object lessons. But this method, useful as it is at certain stages, has its limitations. It should not be forgotten that, with children, the object itself, for purposes of instruction, is always better than any representation of it. As the picture of an animal, for instance, is only one phase of the form of that animal, and does not usually take into consideration size, color, and many other essential qualities, only a very imperfect impression can be gained from it. This fact should suggest the limitations mentioned. These have reference principally to the end to be attained, to the correctness of the picture, and the number and nature of the objects represented. As to the correctness of the picture, little need be said; as modern publications, in this respect, show a constant improvement, and leave little to be desired. The number of objects represented in each picture should be limited, single figures being, at first, given; afterwards two or three. The objects represented, also, should be familiar things, and several of a kind, inasmuch as, by the contemplation of these, the child's conceptive faculty, or imagination, and powers of generalization are exercised. In this respect, also, the right method in primers and elementary books, is, as a rule, instinctively taken—though not always. The value of this last restriction, at a later period, may be easily illustrated. If the object be to give an idea of some animal never seen—the camel, for instance—the task is made comparatively easy from the child's having seen illustrations of somewhat similar objects with which it is familiar; as the horse, cow, etc. It seizes at once upon the points of resemblance, and, immediately after, upon the points of difference, and thus makes a positive addition to its knowledge. But let the same child be confronted with a picture of a star-fish, or a printing-press, and the probability is, if it has never seen these or any similar objects, that it will get only a very imperfect idea of either. The reason is obvious. With no previous preparation, it is called upon to establish in its mind an entirely new conception, solely from the picture, without any corresponding tangible basis in its experience. The result is a thwarting of the tendency to generalization—so strong with children always—and a confusing of the mind by an indistinct conception, invariably accompanied with a loss of interest. The special uses to which pictures are put, whether as diagrams in illustration of particular studies, or as part of a higher, artistic education, need not here be considered. The publication of the *Orbis Sensualium Pictus*, by Comenius, was, probably, the earliest attempt to use pictures as a direct and systematic means of instructing children. (See COMENIUS.)

PIO NONO COLLEGE, at St. Francis Station on Chicago and North-western Railroad, 4 m. from Milwaukee, Wis., was founded in 1871. It is under Roman Catholic control, and admits none but Catholics. It is supported by tuition fees, which, including board, tuition, etc., are $55 per quarter of 2½ months. For music, telegraphy, and phonography there is an extra charge. The course of study embraces thorough instruction in the English, German, and French languages, mathematics in all its branches, book-keeping and history. The number of pupils, in 1875—6, was about 60. The first president was the Rev. Joseph Salzmann, D. D., who was succeeded by the present incumbent (1876), the Rev. Theodore Bruner. The normal school at the same place, for the education of teachers and organists for Catholic schools and churches, has been, since the organization of the institution, under the same presidency as the college. In 1876, this school had 70 pupils. A Catholic deaf and dumb institution, in connection with the normal school, was founded in 1876.

PITTSBURGH, a large and important city of Pennsylvania, having a population, in 1870, of 121,215, which, in 1876, was estimated to have increased to 130,000. The town was laid out in 1764, incorporated as a borough in 1794, and as a city in 1816. Since that time, its boundaries have been enlarged no less than five times —in 1836, '45, '66, '68, and '72.

Educational History.— Pittsburgh promptly availed itself of the provisions of the state school law of 1834 (see PENNSYLVANIA); and, the next year, a public school was opened, which commenced with an enrollment of only 5 pupils. From that time till 1855, the Pittsburgh schools were under the control of the state, and each ward board had full control of the educational and financial interests of its own school; but, at the latter date, the legislature, by a special act, consolidated the several wards into one school-district, placing the management of the schools under the control of a central board of education, composed of one member from each ward, or sub-district, to be elected by the ward board. The following year, the first public high school was established. In 1868, in pursuance of an act establishing the office of city superintendent of schools, George J. Luckey was elected to that office, to which he has several times been re-elected, his fourth term expiring in May, 1878. Previous to his election, there was great diversity in school management and methods; but, under his earnest and efficient administration, a good degree of uniformity has been established. The following shows the growth of the public schools since their consolidation in one school-district, in 1855. In 1856, the enrollment of pupils was 6,724; in 1860, it was 7,608; in 1865, it had increased to 8,743; in 1870, to 12,883; in 1875, to 20,483; and, in 1876, to 21,488.

School System.—The general management of the system is vested in the Central Board of Education, consisting of 36 members, one from each district, and holding office for three years, one-third of the board being changed each year. There are, besides, sub-district boards, one in each ward, each consisting of 6 members, having the same term of office as the members of the central board, and one-third retiring annually. Each of these ward boards appoints its own teachers, and levies the tax necessary for the payment of janitors and other expenses; but the central board appoints the teachers of the high school, fixes the salaries of all the teachers employed in the city, and levies the tax necessary for their payment. It has the exclusive control of the high school, and prescribes the text-books to be used in all the schools.—The course of instruction prescribed for the ward schools comprises the usual common-school branches, including music and drawing. There are 13 grades, embracing a 7 years' course. Pupils, in passing from the ward schools to the Central High School are required to pass an examination in reading, spelling, grammar, composition, arithmetic, algebra, geography, history, and the elements of natural philosophy, besides writing, drawing, music, and calisthenics. In order to succeed in this examination they must give, on an average, 65 per cent of correct answers in all the studies, and not fall below 40 per cent in any. The High School is divided into three departments; (1) academical, (2) normal, and (3) commercial. The studies pursued in the academical department are Latin, Greek, German, algebra, geometry, trigonometry, surveying, astronomy, chemistry, physics, botany, physiology, physical geography, zoölogy, geology, general history, composition and rhetoric, mental and moral philosophy, mechanical and free-hand drawing, elocution, and music. In the normal department, the course consists of arithmetic and algebra; English grammar, literature, and composition; geography; the history and constitution of the United States; drawing and music; physiology (by lectures); elements of chemistry, geology, and physics; theory of teaching, and two or more weeks' practice in the same. The commercial course includes the department of theory (3 months), the intermediate department (3 months), and the department of practice (4 months).—The superintendent has authority by law to call teachers' institutes, and, like the county superintendents, to draw from the county treasury moneys for their support; also to elect a committee on permanent certificates for the city of Pittsburgh. Four stated sessions of the teachers' institute are held annually in the city; namely, on the third Friday evening and the following Saturday forenoon of the months of January, March, May, and October; and a three days' session during the week preceding the annual opening of the schools. The stated meetings are devoted to professional lectures and discussions, and practical exemplifications of methods by the introduction of actual classes of pupils, who receive lessons in the presence of the institute.—Examinations for teachers' licenses are held by the superintendent, assisted by a board of examiners, in accordance with the general law of the state.

School Statistics.—Besides the Central High School, there are 39 ward schools, each of which, in pursuance of the law of 1869 consolidating the wards, is known by a distinctive name, instead of a numerical designation. There are also evening schools. The other items of importance, for 1876, are as follows:

Number of pupils enrolled.........	21,488
Average monthly enrollment........	17,180
Average daily attendance..........	14,501
Enrollment in evening schools.....	4,086
Attendance in evening schools.....	1,769
Number of teachers in day schools.	419
Total tax levied for school purposes.....	$602,941.37
Total valuation of school property......	$1,904,500.00
Cost per pupil, on annual enrollment....	$16.00

There are 9 secondary schools, including 2 commercial colleges, and 1 school of design, employing 45 teachers, and attended by 2,297 pupils. The Roman Catholic parochial schools are attended by 8,073 pupils.—For information in regard to higher institutions of learning, see the article on PENNSYLVANIA.

PLATO, one of the greatest of the Greek philosophers, was born at Athens, 429 or 430 B. C., and died about 348. He was of illustrious descent, on both his father's and his mother's side; but very little is definitely known regarding his early life. From his own writings, we learn that he intended to enter public life, but became disgusted with the corruption and general depravity of the times, and turned his attention to the study of philosophy. When he was twenty years old, he became a pupil of Socrates; and, for eight years, he constantly attended his great teacher. After the death of Socrates, Plato made extended journeys, and, about 389, spent a short time at the court of the tyrant Dionysius, in Syracuse. After an absence of twelve years, he returned to Athens, and founded a school for the instruction of youth in the principles of philosophy, in a small garden in the *Academia*, a public grove or park which Academus had given for gymnastic exercises; and hence, Plato's school was called the *Academy*. Adorned with statues, temples, and sepulchers, surrounded with high trees, and intersected by a gentle stream, it afforded a delightful retreat for contemplation. How much Plato valued mathematical studies, as a preparation for higher speculations, appears from the inscription he put over the entrance of his private house, in which he gave instruction to a few select disciples: *Let no one ignorant of geometry enter here.* He was attended by a crowd of hearers of every description. Among them were many who became celebrated as statesmen or as philosophers. Even women attended, and people of distinction did not hesitate to be his hearers. (See Athens, and Academy.) He was surnamed *the Divine*, because of his wisdom and learning. Statues and altars were erected to his memory, and the day of his birth was long celebrated as a festival. Under his name we have 41 dialogues, 13 letters, and a collection of philosophical definitions; but only the dialogues have been positively ascertained to be genuine. Plato, alone among the pupils of Socrates, had carefully studied all the philosophical systems of antiquity as far as they were accessible to a Greek inquirer; and, in his dialogues, he considers the various theories in turn, and develops his own system only in his strictures in relation to them. As with Socrates, so with Plato, *ethics, i. e.*, the metaphysical idea of the good, is the principal subject of philosophy. The highest good is not pleasure, nor knowledge alone, but the greatest possible likeness to the Divinity, as the absolute good. Virtue is the imitation of God, or the free effort of man to attain to a resemblance to his original, or, in other words, a unison and harmony of all our principles and actions, according to reason, whence results the highest degree of happiness. Virtue is *one*, but compounded of four elements: wisdom, courage or constancy, temperance, and justice; these are otherwise termed the *four cardinal virtues.* They arise out of an independence of, and superiority to, the influence of the senses; they are the product of the health and beauty of the soul.—The state, being a society of individuals, is, therefore, subject to the same obligations on a large scale. Its end should be liberty and concord; its highest mission, the training of the citizens to virtue. The education of youth should be regulated by a consideration of the duties which they are expected to perform in the state. In the ideal state, each of the three principal functions and corresponding virtues of the soul is represented by a particular class of citizens: (1) the rulers, whose virtue is wisdom; (2) the guardians or warriors, whose virtue is valor; and (3) the manual laborers and tradesmen, whose virtue is obedience and self-restraint, and whose training should be only in their particular trades. The education of the other or higher classes is to begin as early as the third year of age, and to continue until the sixth, by the narration of myths; to be followed, from 7 to 10, by gymnastics; from 10 to 13, by reading and writing; from 14 to 16, by poetry and music; from 16 to 18, by mathematical sciences; and from 18 to 20, by military exercises. At this last age, the first sifting takes place—those of inferior mental capacity but valorous, to become warriors; the rest to continue until the age of 30, learning the sciences in the more exact and general form becoming their maturity. Next, the talent for dialectics is tested; and then follows a second sifting. The less promising are given practical public offices; the rest pursue the study of dialectics until the age of 35, and are then intrusted with positions of authority, continuing in the study of philosophy, so as to become, finally, the best fitted in the state for its highest offices. Regarding a good teacher as one of the agents most essential for the formation of good pupils, Plato lays down rules by which to distinguish between a good and a bad teacher, and recommends those in power to exercise the utmost scrutiny and care in the selection of instructors to be employed by the state.—This theory of education, principally set forth in his *Republic* and in his *Laws*, was probably never fully reduced to practice; yet the spirit of all his doctrines seems to have exerted a powerful influence over his countrymen for centuries. For an account of Plato's attempt to establish a model government in Syracuse, see Grote, *History of Greece*, vols. x. and xi. The best English edition of *Plato's Dialogues* is by Jowett (Oxf. and N. Y., 1871). For literature on Plato's *Philosophy*, and the different editions of his writings, we must refer to Ueberweg, *History of Philosophy*; on his educational system, see Schmidt, *Geschichte der Pädagogik*, vol. i.; Kapp, *Platon's Erziehungslehre* (Minden, 1833); Bomback, *Entwickelung der Platonischen Erziehungslehre* (Rottweil, 1854); Wittmann, *Erziehung und Unterricht bei Plato* (Giessen, 1868); Cramer, *Geschichte der Erziehung im Alterthum* (Elberf., 1838); Draper, *Intellectual Development of Europe* (rev. edit., 1876).

POETRY, or the written expression of beauty, is an important instrument in certain departments of intellectual culture, besides aiding in the education of the emotions and sensibilities, and in the cultivation of taste. (See ESTHETIC CULTURE.)—The pupil's first knowledge of written poetry is usually obtained from the school reader. The manner of its presentation there, however, is susceptible of improvement. The free use of figures of rhetoric, and of obsolete or unusual words and phrases, renders poetry inappropriate to the minds of children till after the usual modes of expression have become familiar. Its proper time for presentation, therefore, is when rhetoric is studied—that is, during the latter part of a high-school course, or in the college. Yet nothing is more common than to find a highly-involved passage from Shakespeare, or an abstruse paragraph from Wordsworth, in a reader intended for pupils of from ten to fifteen years of age.—Some vague or half-considered idea that these passages are, in some way, to serve as models, by being thus presented, or are necessary for elocutionary purposes, is probably in the mind of the compiler. But what should we think of the music teacher who should present a symphony of Beethoven, as a model, to a beginner practicing the scales? The parallel case is quite as absurd. The result is bad in two ways: (1) the unintelligibility, to the child, of such a poetical selection deprives it of all use as a model; and (2) the disgust thus occasioned becomes permanent, and leads the pupil, even in manhood, to avoid a reperusal of the author thus used. How many persons, of mature years, date their dislike to Milton, for instance, from an enforced use of his works as reading or parsing exercises in early youth! The introduction of poetry into the school curriculum should follow the natural plan, the first poems used being exceedingly simple, containing no words beyond the vocabulary of the child, and treating of subjects and objects of every-day familiarity. An excellent plan would be to place, as an introductory lesson in reading, a paraphrase in prose of the poem to be used. In this way, the pupil, being possessed beforehand of the meaning of what he is approaching, is at liberty to give more attention to the poetical mode of expression, this being the principal thing to be considered; for, if the meaning were the principal thing, prose would be preferable—it being more direct and in more familiar language.—The fact that rhythmical language is, in many cases, of assistance to the memory, indicates its peculiar fitness for certain educational purposes. By its aid, abstract truths and arbitrary rules may often be fixed in the mind, in a way not possible by any other. Moral truths, also, may often be better retained in the memory by their expression in rhythmical form. The experience of most persons will probably furnish illustrations of this fact. There appears to be a limit to this use of rhyme, however, determined partly by the nature of the things to be remembered, and partly by the esthetic effect produced by such use. It may be said, in general, that all concrete ideas and relations,—those which, upon suggestion, call up in the mind material images—do not require the aid of rhyme to fix them in the memory; while ideas and relations of an essentially abstract or arbitrary nature, are more easily retained in the memory by a rhythmical expression of them. As an illustration of a violation of the first proposition, may be mentioned a rhymed text-book on geography. In the study of geography, the definitions, descriptions, etc., being always accompanied by pictures and maps, are firmly fixed in the mind by the eye—the most effective of all the agents used in acquiring knowledge. To call in the aid of the ear, therefore, is superfluous, and tends, rather, to distraction. If there had been originally any vagueness of conception left by the image addressed to the eye, the ear might, with propriety, be called in to aid it; but, from the nature of things, this is impossible. The picture of a material object will always present to the mind a clearer idea of it, than any verbal description. A further objection, in this case, is, that the rhymed version, degenerating, as it is almost sure to do, into grotesque doggerel, familiarizes the mind of the pupil with the most degraded form of poetry, and tends to unfit it for an appreciation of the higher. In regard to the second proposition mentioned above, it may be said that we naturally seek some short, succinct form for expressing generalizations, and abstract and arbitrary relations, which shall make them convenient for use; and that form is often found. If the poetic form would enable us to remember them more distinctly, and if no objection to its use could be raised, it would be allowable; but if this form, besides adding little to our ability to remember, is open to the additional objection that it presents to the undiscriminating mind of the pupil a bad poetical model, it would seem that it ought not to be used. It can hardly be claimed that rhymed versions of the Lord's Prayer, or of the Proverbs, for instance—of the propositions of geometry, or of the rules of arithmetic, have helped us materially to learn more readily or appreciate more fully the truths contained in them. The very nature of some truths is averse to ornament; and the use of it, in such cases, should be discountenanced.—A frequent result of the appreciation of the beautiful, which underlies all poetry, is the attempt of youth sooner or later to write poetry. Every teacher's experience will supply instances of this. This inclination usually makes its appearance between the ages of 15 and 20, in minds that have a natural taste for beautiful objects, after a considerable command of language has been obtained, and before the realities of life have come to darken, with their shadows, the bright sky of youth. As not one in a hundred, however, of those who write verses, at this age, will become a poet, the teacher's course is plain. His method of cure should be, unsparing criticism, but applied in a kindly spirit. It will require only a few exposures of bad rhymes, false similes and metaphors—and of these, the most preposterous will generally be found to be the most cherished by the writer—to recall the would-be poet to a more sober and useful pursuit.

POLITENESS. See MANNERS.

POLITICAL ECONOMY. See SOCIAL ECONOMY.

POLYTECHNIC SCHOOLS. See SCIENTIFIC SCHOOLS.

POPULAR EDUCATION. See EDUCATION, and NATIONAL EDUCATION.

PORTUGAL, a country in the south-west of Europe, having an area of 35,813 square miles, and a population, in 1872, of 4,367,882, nearly all of whom belong to the Roman Catholic Church, and speak the Portuguese language.

Educational History.—The first ruler in Portugal to exert himself actively in behalf of education was Dom Diniz, in the 13th century. In 1290, he founded the University of Lisbon, which, after several changes of locality, was finally settled at Coimbra; he also established elementary schools for the poorer classes. In 1540, the Jesuits were called to Portugal, and gradually obtained an almost complete control of secondary instruction; but, in the 18th century, they were expelled from the country by Pombal. At the same time, a decree was issued to secularize instruction, and faculties of philosophy and mathematics were added to the University of Coimbra. No record in relation to elementary instruction is found until the 18th century; and the number of primary schools, previous to 1772, was only about 400, while Greek and Latin were taught only in convent schools. Pombal established 257 Latin primary schools, and founded and provided for 21 professorships of rhetoric and history, besides schools of philosophy, logic, metaphysics, and the moral sciences. He also gave his attention to the endowment and supervision of seminaries for the priesthood, and reorganized the University of Coimbra after the model of the Italian universities. With the overthrow of Pombal, the clergy and nobility again resumed control of public education. During the wars and revolutions of the first half of the present century, education was necessarily neglected. In 1836, a general system for the re-organization of the public schools of all grades was prepared by De Compos, vice-rector of the Coimbra University. This was modified by the regulations of 1844. In 1875, a new law was prepared by the minister of the interior, which is now in force.

Primary Instruction.—According to the law of 1875, there must be two classes of primary schools,—the elementary, and the higher elementary schools. Instruction is free only in the former. Every parish must have separate elementary schools for boys and for girls; but, in very small parishes, mixed schools are allowed. Every *arrondissement* must have a higher elementary school. Teachers are appointed by the communal council, upon the nomination of a school commission. This commission consists of three members of the communal council, a representative of the charitable institutions of the commune, and the sub-inspector of the *arrondissement*. The communal council can remove teachers, but only in connection with the signer of the contract of appointment, after a trial of the accused, and after the school commission has passed a unanimous resolution to that effect. At the head of the educational system, is the supreme council of studies; with the minister of the interior as president, and the rector of the university of Coimbra, or his delegate, as vice-president. It is, furthermore, composed of eight regular judges and a large number of irregular judges. The regular judges are men distinguished for learning and good character; while the irregular judges are professors at Coimbra, or graduates from that university. Candidates for the position of teacher must be twenty-one years of age, and possess a certificate of health and morals, signed by the pastor of their place of residence. They must pass a public examination, which is intended to ascertain their maturity of mind, rather than their actual acquirements. Teachers are of two degrees. Those of the first degree are appointed either for life or for three years; those of the second degree, for life only. Instruction is given in the primary schools daily, except on Sundays and holidays; but when there is no holiday during the week, Thursday is free. The daily sessions are from 8 to 11 o'clock in the forenoon, and 2 to 5 in the afternoon, from October till Easter; the rest of the year, from 7 to 10 A. M. and from 3 to 6 P. M. The study commissioners may also authorize teachers to form evening classes for adults. Every year the study commission publishes a list of all children of school age. The names of those parents who fail to have their children registered, are read by the minister from the pulpit, and a list of them is nailed to the church door. Upon repeated offenses, fines are imposed. In the same manner, regular attendance is enforced. The branches of instruction in the elementary schools comprise reading, writing, arithmetic, language, morals, and, for girls, sewing. In the higher elementary schools, there are taught, in addition to these branches, linear drawing, history, the elements of the natural sciences, and agriculture. Five seminaries are to be established for male, and two for female teachers. In 1869, there were, 1,997 schools for boys and 362 for girls, making a total of 2,359. The number of pupils enrolled was 117,305, of whom 99,358 were boys, and 17.947 girls. The number of pupils attending the schools was 62,937, of whom 52,720 were boys, and 10,217 were girls. Besides these, there are many excellent private schools in the principal cities. There were also 5 normal schools for males, with 100 students, and one for females, with 20 students.

Secondary Instruction.—Secondary instruction is imparted in lyceums, which correspond pretty much to the French institutions of that name. At some of the lyceums, agriculture and rural economy are taught; and, at Funchal, Madeira, and other places on the islands belonging to Portugal, French and English; while. in other places, the course of studies comprises chemistry, natural history, mechanics, book-keeping, trigonometry, mathematical geography, and other branches. Greek, German, and English are not obligatory; but a knowledge of these languages is advantageous at the final examination. Candidates for the appointment of professor in a lyceum must be at least 25 years of age. The examination is both oral and written. Graduates of the Coimbra university are preferred, and the appointments are made for life, and in the name of the king. Besides the lyceums of the state, there are private colleges, the teachers of which must also possess a license to teach. They are likewise subject to inspection by the government. Teachers in the lyceums, as well as in the primary schools, are exempt from taxation and military duty. Independently of the lyceums, the government may establish Latin classes in 120 of the most important places near the capitals of the several districts. These classes are instructed in public buildings, have each a library, and are provided with the necessary books of instruction. The number of lyceums, in 1869, was 21, with 3,744 students.

Superior Instruction. — Superior instruction is afforded in the University of Coimbra, which has five faculties: theology, medicine, mathematics, and philosophy. In 1859, Dom Pedro V., in order to excite a greater interest in education, opened, at his own expense, a faculty of *belles-lettres*, with five professorships, which hold the same rank as those of the university. The University of Coimbra has from 900 to 1,000 students.

Special Instruction.—Special instruction is given in the following schools: 19 theological schools and courses, one polytechnic school at Lisbon, and one at Oporto, 3 medico-surgical schools, one school of veterinary surgery, one general agricultural institute, one commercial school, five industrial schools, two academies of fine arts, one conservatory of music, an army school, a navy school, and a military college, in Lisbon.—See SCHMID, *Pädagogische Encyclopädie*, art. *Portugal;* BRACHELLI, *Die Staaten Europa's; Chronik des Volksschulwesens*, 1875; *Report of the U. S. Commissioner of Education* for 1873.

POTTER, Alonzo, an American educator, born in Beekman, N. Y., July 6., 1800; died in San Francisco, Feb. 4., 1865. He graduated with first honors at Union College in 1818, became a tutor there in 1819, and, in 1821, was made professor of mathematics and natural philosophy. While holding the latter position, he declined the presidency of Geneva College. He was rector of St. Paul's church, Boston, from 1826 to 1831, which position he resigned in the latter year to accept that of professor of moral philosophy in Union College, of which institution he became vice-president in 1838. He was made bishop of Pennsylvania in 1845, which position he held till his death. He was the author of a treatise on logarithms, and one on descriptive geometry, both prepared for the use of his classes while professor in Union College, but not published. His most noted educational work was that published in connection with G. B. Emerson, entitled *The School and the Schoolmaster* (1842). Besides this, he was the author of many addresses, discourses, etc., upon subjects connected with education. Interesting notices of his life and works may be found in Bishop Stevens's funeral sermon (Oct. 19., 1865), and in *Memoirs of the Life and Services of the Rt. Rev. A. Potter, D. D., LL. D.*, by the Rev. Dr. M. A. De Wolfe (Phila., 1871).

PRACTICE, Schools of. See TEACHERS' SEMINARIES.

PRAXIS (Gr. πρᾶξις, from πράσσειν, to do), a particular form of exercise designed to afford practice to the pupils; as a praxis for parsing or analysis, in teaching grammar.

PRECEPTORS, College of (London), is a body founded in 1846 to enable teachers, particularly in private schools, to acquire a sound knowledge of their profession, and to give them the opportunity of obtaining certificates attesting their attainments and fitness to teach. The first promoters of the college, deploring the incompetency of so many teachers, desired that every one entering the profession should provide himself with such a certificate, as a guarantee to the public and to his fellow-teachers. The movement (which had originated at Brighton) spread rapidly; and, within a year, there were 1000 members. (As to the qualification for membership, see below.) These were formed into a corporate body, in 1849. The lowest diploma which the college grants is that of Associate, next come those of Licentiate and Fellow. Candidates for all these diplomas are examined in the science and art of education; and are excused the other subjects, if they have previously passed elsewhere what is recognized as an equivalent examination. One peculiarity of the examination for those who have to pass in all the subjects, is, that each subject may be taken up separately, and the rest when the candidate pleases. This is very convenient for hard-worked teachers who have little leisure. There is not, however, a very large demand for these diplomas. The number of persons, male and female, at present holding them is 338, of whom 49 are Fellows, 130 Licentiates, and 159 Associates. Unfortunately, in regard to the *membership*, the very error, for many years, was committed which the college was founded to do battle against. The promoters intended to include among the first members all persons of respectability, both males and females, who were at the time engaged in teaching, and paid a yearly subscription of one guinea. But they also intended, at no distant date, but *a date not assigned*, to subject all candidates for membership to examination. Amid the pressure of other business, however, and of crippled resources, the latter intention was lost sight of. It would seem, also, that there had been some laxity in the granting of diplomas. The consequence was that A. C. P., L. C. P., F. C. P. with M. C. P. became involved in one common depreciation. It must be understood that the college, in its documents, had always drawn a clear distinction between examined and unexamined members — a distinction which the general public could not be expected to bear in mind or even to apprehend.

The investigations of the Schools Inquiry Commission, along with a general movement on the part of various learned bodies for stricter conditions of membership, drew the attention of the more active members of the college to the necessity of reform; and, since the spring of 1870, no member has been admitted without either being examined by the college, or showing that he has passed, elsewhere, one of the examinations specified in the regulations. The college, therefore, was never in a more healthful and hopeful state than at the present time. The stricter regulations have not diminished the number of applications for membership, there being 976 members in Nov., 1876. Of these, 243 are also holders of diplomas. The remaining 95 holders of diplomas are not members, and do not share in the government of the college. — The journal of the college, which publishes reports of its proceedings, is the *Educational Times*, which was commenced in Oct., 1847, and is published monthly; but, though the official organ, it is not the property of the college.

In 1872, a professorship of education was instituted; and the late Joseph Payne was appointed to the chair. He commenced his first course, at the beginning of 1873, to a class of about 70 teachers, most of whom were ladies. The office has since been held by the Rev. R. H. Quick, author of *Essays on Educational Reformers* (London and Cincinnati); by Mr. Meiklejohn, lately appointed to the new chair of education at St. Andrews, Scotland; and by Mr. Croom Robertson, professor of logic at University College, London.

There are other kindred duties, in addition to those at first contemplated, which the college has undertaken. At Christmas, 1850, it conducted its first examination of schools; and the system was in full operation in 1854, two years before the scheme of the Society of Arts, and four years before that of the University of Oxford. These examinations are held every half year at various centers, simultaneously; and certificates, with prizes for the most distinguished, are bestowed upon the successful boys and girls. The number of candidates at these examinations, in 1875, was about 2,800, coming from about 150 schools.

There is also a system in operation for the examination of schools by visiting examiners; under which the examiner makes an official report of the state of the school, but no certificates are granted. The College, moreover, conducts the preliminary examinations in arts, for various medical corporations. The number of pupils at these examinations is about 5,800 a year.

In June 1861, were commenced the monthly meetings of members and their friends, at which papers on educational subjects are read and discussed. These meetings tend to "corporate feeling and helpful union," for those members, at least, who live in London or its vicinity. The papers, many of them of great value, are generally reported at length in the next number of the *Educational Times*. There is an educational library of nearly 4,000 volumes, to which constant additions are made, mostly by gift. — The college is managed by a council of 48 members, twelve of whom retire every year. They are elected at a general meeting of members. In addition to these 48, all ex-presidents of council become members of it for life. Among the presidents of the council, have been Dr. Jacob, late of Christ's Hospital; Dr. Kennedy, late of Shrewsbury; and Dr. Haig-Brown, of the Charterhouse. At present Dr. Jex-Blake, of Rugby, is the president.

The college is doing a good and useful work for middle-class schools, and its further usefulness is hindered only by its want of funds. It needs a more complete educational library, a more commodious home than its present one (at 42 Queen Square, Bloomsbury), and an endowment for its professorship. For this last purpose between £400 and £500 has been contributed up to the present time. In 1875, the members' subscriptions yielded £521; the net profits from the examinations produced a sum perhaps somewhat larger than this; and there seem to be no other sources of income.—See a paper by J. Payne on the history of the college in the *Educational Times*, July, 1868; The *Charter, Regulations*, and other documents of the College; Speech of Dr. Jex-Blake, in the *Educational Times* for Feb., 1876; DEMOGEST and MONTUCCI, *De l'Enseignement Secondaire en l'Angleterre*, vol. I.; *Schools Inquiry Commission*, vols. I., IV., VII., IX. (1868).

PREPARATORY SCHOOLS, schools for secondary instruction, in which pupils are prepared for admission to the college or university.

PRESBYTERIANS, a denomination of Christians distinguished by their support of a system of church government by presbyters, in opposition, on the one hand, to Episcopalians (q. v.), and, on the other, to Congregationalists (q. v.). The Presbyterians, in this respect, agree with the Reformed churches (q. v.), and were, like them, modeled after the plan laid down by Calvin, in his *Institutes*. The Presbyterians constitute the established church in Scotland, and are a numerous body in all other parts of the British Empire, as well as in the United States. Both in Europe and in the United States, they are divided into a number of independent organizations. In 1875, delegates from a large number of Presbyterian and Reformed churches met in London, England, to form an Alliance of Reformed Churches throughout the World, which is to be a voluntary and co-operative, but not an organic union. We treat in this article (I) of the Presbyterians in the British Empire; and (II) of the Presbyterians in the United States.

I. *Presbyterians in the British Empire.*— (1) The bulk of the population of *Scotland* has been Presbyterian since the middle of the 16th century; and, at present, the aggregate number of the different Presbyterian bodies exceeds 85 per cent of the total population. The established church, called the Church of Scotland, has about

1,300 congregations; the Free Church of Scotland (organized in 1843), 900; the United Presbyterians, 600; and, besides these, there are several smaller bodies. The progress of educational institutions of all classes has, therefore, been, to a great extent, under the influence of the Presbyterian Churches. (See SCOTLAND.) No church in Europe has taken more prompt and energetic steps for the general diffusion of school education than the Presbyterians of Scotland. As early as 1695, it was enacted "that there be a school founded and a school-master appointed in every parish by advice of the presbyteries, and to this purpose that the heritors do, in every congregation, meet among themselves, and provide a commodious house for a school, and modify a stipend to the schoolmaster, which shall not be under 10 merks (£6 13 s. 4 d.) nor above 20 merks". As almost all the population of the country is Presbyterian, the common-school system has preserved a parochial character. When, in 1843, the Free Church of Scotland was organized, it was resolved to erect schools in connection with the congregations of the Free Church, and the educational scheme which, in consequence, has sprung up, is co-extensive with the parochial system of the Established Church. In 1873, of 2,108 schools inspected by the government inspectors, 1,379 belonged to the Established and 577 to the Free Church; while, of non-Presbyterian schools, there were 86 belonging to the Episcopal, and 66 to the Catholic Church.—The Scottish universities of Edinburgh, Glasgow, and Aberdeen are in organic connection with the Church of Scotland, by means of theological professorships; while, at St. Andrews, an entire college, St. Mary's, is appointed solely to the teaching of theology and the languages connected with it. The Free Church has established a divinity school in Edinburgh, called the New College of the Free Church. This college, which was completed at a cost approaching £40,000, is provided with a more complete staff of professors than any similar institution in Scotland, and with more effectual means of training an educated ministry than is to be found elsewhere in Great Britain. The Free Church has also built a divinity hall in Aberdeen. It has also two normal schools, — one in Edinburgh and one in Glasgow, for the training of school-masters. The teachers receive a salary from a general fund, which is raised by monthly contributions in all the congregations, and which is divided, at the end of the year, according to a certain scale, proportioned to the qualifications of the respective teachers.—The United Presbyterians have likewise a divinity hall. The number of their Sunday-schools is 12,129, with 92,502 scholars.

(2) In *Ireland*, the Presbyterians constitute about 8 per cent of the total population, and are almost confined to the province of Ulster. In the schools of the National Board of Education, the Presbyterian children, in 1874, numbered 115,258, equal to about 11 per cent.—A Presbyterian college (Magee College) was opened at Londonderry, Oct. 10., 1865. In 1846, Mrs. Magee, widow of the Rev. William Magee, a Presbyterian minister, left £20,000 in trust for the erection and endowment of a Presbyterian college. This sum was allowed to accumulate for some years, until eventually the trustees were authorized, by a decree of the Lord Chancellor, to select a convenient site at or near Londonderry. The Irish Society have granted an annual endowment of £250 to the chair of natural philosophy and mathematics, and £250 for five years toward the general expenses of the college. The Rev. Richard Dill, who died in 1858, bequeathed £5,000, to establish two professorships. The appointment of the trustees is vested in the General Assembly. The professors are required to sign the Westminster Confession of Faith, but no religious test is prescribed for students.—The majority of the Irish Presbyterian ministers are educated in the General Assembly's Theological College, at Belfast. Previous to the passing of the Irish Church Act, in 1869, a parliamentary grant of £1,750 per annum sufficed for the maintenance of six professors, at £250 each, leaving £250 to defray the expense of management. The government, on the passing of the act, granted a sum of £43,976 as compensation; and the interest of this sum, together with that on £5,000 subscribed by friends of the institution, and the fees of the students, make up the annual income. Patrons have recently added prizes, worth from £20 to £50 per annum.

(3) In *England*, the first presbytery was formed in 1572; and, for a time, the Presbyterians formed the leading Puritan element in the Church of England. At the time of the Westminster Assembly, Presbyterianism was, for a short time, even raised to the position of the established religion of England. The Presbyterians having been overthrown politically at the Restoration, and crushed ecclesiastically by their ejection from the national church, a large portion gradually merged into Congregationalism or Unitarianism. The scattered fragments of the old orthodox Presbyterianism of England formed, in 1836, the English Presbyterian Church, which, in 1876, numbered 157 congregations, and 29,045 communicants. It had also 2,926 Sunday-schools, with 27,000 scholars. By a union with the United Presbyterians of England, consummated in 1876, the number of the Congregations was raised to 263, and that of members, to 50,000. The Church has a theological college at London, which is partially endowed, and is under the charge of three professors.

(4) *British Dependencies.*—In the Dominion of Canada, the Presbyterians are, in point of numbers, the third among the religious denominations, being only exceeded by the Roman Catholics and the Church of England. The four provinces of Ontario, Quebec, Nova Scotia, and New Brunswick, had, in 1871, a population of 107,259 connected with the Church of Scotland, and 437,439 persons connected with various Presbyterian bodies. Ontario has a Presbyterian

university at Kingston, called Queen's University and College, which received a royal charter in 1841, and contains the four faculties of theology, law, medicine, and arts. In Quebec, there is McGill University, at Montreal, with several affiliated colleges, and, in Nova Scotia, a Presbyterian college, at Halifax. In Australia, the colony of Victoria had, in 1876, 3 Presbyterian colleges—Scotch College at Melbourne, Geelong College, and Ballarat College.

II. The Presbyterians in the United States include several bodies, here considered separately.

(1) *Presbyterian Church in the United States of America.*—Presbyterian churches had been established in Maryland before the close of the 17th century. In 1716, the first synod was formed, and in 1788 the General Assembly was organized. The Cumberland Presbyterians seceded in 1810; and, in 1838, the Church divided into the Old School and the New School, which reunited in 1871. The churches in the Southern States withdrew in 1861, and have since maintained a separate organization. In 1876, there were under the jurisdiction of the General Assembly 4,744 ministers, 5,077 churches, and 535,210 members. The Presbyterian Church, from the earliest period, has been an earnest worker and strenuous advocate for education; and one of the chief causes of the secession of the Cumberland branch was the tenacity with which the General Assembly insisted on high educational qualifications for ministers. As early as 1739, a proposition was brought before the Synod of Philadelphia for the erection of a school or seminary of learning. The synod approved of the design and appointed a committee to carry it into effect, and in 1744, a synodal school was established. The College of New Jersey, at Princeton, chartered in 1746 and opened in 1747, was founded under the auspices of the Synod of New York. Other institutions have been organised under Presbyterian auspices, as follows: Washington and Jefferson College, Washington, Pa., 1802; Hamilton College, Clinton, N. Y., 1815; Maryville College, Maryville, Tenn., 1819; Centre College, Danville, Ky., 1823; Hanover College, Hanover, Ind., 1827; Lafayette College, Easton, Pa., 1831; Wabash College, Crawfordsville, Ind., 1832; Lincoln University, Oxford, Pa., 1853; University College, San Francisco, Cal., 1859; Blackburn University, Carlinville, Ill., 1867; King College, Bristol, Tenn., 1868; University of Wooster, Wooster, O., 1870; Evans University, Evans, Col., 1874; and Parsons College, Fairfield, Iowa, 1875. Three colleges are jointly under Presbyterian and Congregational control; namely, Knox, at Galesburg, Ill., 1841; Beloit, at Beloit, Wis, 1847; and Olivet, at Olivet, Mich., 1828. The academies and female colleges under the auspices of the denomination are numerous. The Church has 13 theological seminaries, as follows: at Princeton, N. J., 1812; at Auburn, N. Y., 1820; Western, Allegheny City, Pa., 1825; Lane, Cincinnati, O., 1832; Union, N. Y. City, 1836; at Danville, Ky., 1853; Theological Seminary of the Northwest, Chicago, Ill., 1859; Blackburn University (theological department), 1867; at San Francisco, Cal., 1869; German, Newark, N. J., 1869; German, Dubuque, Ia., 1870; Lincoln University (theological department), 1871; and Biddle Memorial Institute (theological department), Charlotte, N. C., 1867. Of these, the last two are for colored people, and the two immediately preceding them, for Germans. In 1875—6, they had, in all, 56 professors and 578 students. The number graduating that year was 134. The board of education of the Church, in 1876, received $72,040, and gave financial aid to 458 students (222 theological, 218 collegiate, and 18 academical). In the same year, the Church maintained, for freedmen, 39 day schools, with 65 teachers and 3,176 pupils, and 5 higher schools, with 903 students, of whom 43 were preparing for the ministry. The foreign mission field of the Presbyterian Board embraces—besides several Indian tribes in the United States—Mexico, the United States of Colombia, Brazil, Chili, Liberia and Gaboon (Africa), India, Siam, China, Japan, Persia, and Syria. The mission schools had 13,501 pupils in 1876.

(2) *The Presbyterian Church in the United States*, frequently, also, called *The Presbyterian Church South.*—On the 4th of December 1861, commissioners from all the presbyteries of the Presbyterian Church within the Confederate States met in Augusta, Ga., and organized as a General Assembly. The style and title chosen for the Church was, *The Presbyterian Church of the Confederate States of America;* but after the capitulation of the Confederate armies, the name was changed as above. After the close of the war, the presbyteries in Kentucky and Missouri, with a large majority of the congregations and people, united themselves with the Southern Church. This Church now (1876) consists of 12 synods, 62 presbyteries, 1,821 churches, 1,079 ministers, and 112,183 communicants. The moneys contributed for all the purposes in the last ecclesiastical year amounted to $1,138,681. The General Assembly, through committees of its appointment, maintains foreign missions in the Indian Territory, Mexico, South America, Greece, Italy, India, and China; and domestic missions in new and destitute localities in the South. It also aids in the education for the ministry of young men of limited means, and in the publication and dissemination of a religious and doctrinal literature. It has a publishing house in Richmond, Va. The Presbyterian Church declares, in its constitution, that "because it is highly reproachful to religion, and dangerous to the Church, to intrust the holy ministry to weak and ignorant men, the presbytery shall try each candidate, as to his knowledge of the Latin language, and the original languages in which the Holy Scriptures were written. They shall also examine him in the arts and sciences." The first written text required of the candidate is "a Latin *exegesis* on some common head in divinity." The common requirement in its presbyteries is equal to the *curriculum* in

most American colleges. The demands of the Church for the education of its ministry and its own youth have every-where made it the patroness of learning and engaged it in the founding of institutions for higher education. It has been the pioneer of education in nearly all the older Southern communities. During the civil war, many of the institutions of learning founded and endowed by the Presbyterian Church in the South, perished by the loss of endowments in the general financial wreck. Among them, were Oglethorpe University, Ga., Oakland College, Miss., La Grange College, Tenn., and other valuable institutions of less prominence. Centre College, Ky., was lost through decisions of the United States courts in favor of a minority adhering to the old Assembly. Others were suspended by the enlistment of the students in the armies, and were crippled by the partial loss of endowments. The following, founded and endowed by Presbyterians, survived the disasters of the war, and now, under Presbyterian control or auspices, are rendering valuable service to the country: Hampden Sidney College, Va., Davidson College, N. C., Stewart College, Tenn., Westminster College, Mo., King College, Tenn., and Austin College, Texas. Central University, at Richmond, Ky., has been founded and successfully opened since the war. The synods of Nashville, Memphis, Alabama, Mississippi, Arkansas, and Texas, conjointly, have also projected a university (the South-Western) to be strictly under Presbyterian control, for which they are now soliciting an endowment. It has been located at Clarkesville, Tenn. Stewart College has been merged in it. The financial prostration of the South since the war, has rendered the endowment of its institutions of learning slow and difficult.—Of academies and schools, competent to prepare boys for college, or young men for the university, or to give a good mathematical and classical education, thorough as far as it goes, to those whose means do not admit of more elaborate courses, there is a great insufficiency throughout the South. Those which had previously acquired success and reputation, were generally broken up through the disastrous effects of the war, and the poverty and depression of the people have operated to the discouragement of efforts to establish others. Of such institutions, there are some of a high character, maintained under Presbyterian auspices; as, the Bingham School, Mebanesville, N. C., Pleasant Ridge Academy, Green Co., Ala., Edgar Institute, Paris, Ky., Military and Classical Institute, Danville, Ky., Finlay High School, Lenoir, N. C., and Kemper Institute, Booneville, Mo.—The Southern Presbyterian Church has two theological seminaries, each endowed and furnished with buildings, libraries, and four professors of eminent ability and learning: Union Seminary, at Hampden Sidney, Va., and Columbia Seminary, at Columbia, S. C. It has recently established a third, at Tuscaloosa, Ala., for the education and training of colored men for the ministry; and for this, it is now gathering an endowment. There are no Presbyterian schools or colleges for girls in the South endowed beyond the provision of buildings, apparatus, and libraries; but there are many institutions under Presbyterian control or auspices, in which every reasonable comfort is combined with advantages for the thorough education and accomplishment of girls. Among these, are many female colleges, collegiate institutes, and seminaries which afford a high grade of instruction, and are widely esteemed for general excellence and efficiency.

The work of education for the ministry is conducted by the General Assembly, through an executive committee located at Memphis, Tenn. In the last ecclesiastical year, the committee received from the churches, for this purpose, $15.131, from which 95 young men, prosecuting their studies at various colleges and theological seminaries, received assistance.

(3) *The Cumberland Presbyterian Church.*—This Church was organized February 4., 1810, in a log cabin, in Dickson Co., Tenn., by three Presbyterian ministers. It grew out of the controversies incidental to the Great Western Revival of 1800, which is regarded by many as one of the most important religious movements in the history of the Protestant Church of the United States, as it firmly fixed the people of the Valley of the Mississippi in the Christian faith. After ten years of anxiety and distress, the new Presbyterian Church was organized upon what is claimed to be a *medium theology*, as between the extremes of low Arminianism (Semi-Pelagianism) and high Calvinism (Antinomianism). In it, an evangelical follower of John Calvin or of John Wesley could alike feel at home. The Church grew very rapidly. The *Minutes of the Forty-Sixth General Assembly*, 1876, show 26 synods, including nearly 125 presbyteries, extending over the territory between the Great Lakes and the Gulf of Mexico, and reaching from the Appalachian Mountains on the east, to the Pacific Ocean on the west. The following statistical summary is approximately correct: ministers, 1,275; licentiates, 280; candidates, 220; congregations, 2,000; elders, 6,750; deacons, 2,000; total communicants, 100,000; persons in the Sabbath schools, 55,000; value of church property, $2,250,000; contributed during the year, $350,000. The following are the principal institutions of learning under the control of this Church: Cumberland College, Princeton, Ky., founded in 1829, discontinued in 1861; Cumberland University, Lebanon, Tenn., founded in 1842, which has the leading law school in the South; Bethel College, McKenzie, Tenn., 1847; Waynesburg College, Waynesburg, Pa., 1850; McGee College, College Mound, Mo., 1853, now suspended; Lincoln University, Lincoln, Ill., 1866; Trinity University, Tehuacana, Texas, 1876; Cane Hill College, Boonsboro, Ark., 1852. The General Assembly, in 1876, approved the establishment of a Union Medical College, in connection with the three universities of the Church, namely, Cumberland, Lincoln, and Trinity. It is to be located at St. Louis, or some other large city.

Waynesburg, Lincoln, and Trinity, admit young ladies on equal terms with young men. There are also several institutions exclusively for girls, owned by, or under the patronage of, the Church.

(4) *The United Presbyterian Church of North America* was founded, in 1858, by the Union of the Associate, commonly called *Seceder*, Church (which originated in the secession of the Erskines and others from the established church of Scotland, in 1733, and sent its first missionaries to America, in 1753), and the Associate Reformed Church, which was formed, in 1782, by the union of part of the Associate Church and part of the Reformed, or *Covenanter*, Church, which organized its first presbytery in America in 1770. The Church, in 1876, had 8 synods, 57 presbyteries, 77,414 members, and 638 Sabbath schools with 53,364 scholars.

Previous to the Revolutionary war, the Associate Church in Scotland, and that in America, were not two churches but one; and its ministers were educated in Scotland. From the first, the ministers were well educated, most of them having received university degrees. Even when the churches in the colonies suffered from a scarcity of clergymen, they did not propose to license the uneducated, but to provide for an education as thorough as that of a Scottish university. In 1764, the Presbytery (organized in 1754) made a request for more ministers, and for one able to teach "the languages and philosophy", which brought from Scotland, the Rev. John Smith, who, for the next four years (1778—1782), by appointment of the Presbytery, "directed the studies of such as were pursuing a course with a view to the holy ministry." The way was prepared for ecclesiastical as well as for political independence. The reception of a minister from a division of the Seceder Church (Burgher), different from that (Anti-Burgher) by which the ministers of the American Presbytery had been sent out, prepared the way for a separation, which was practically effected in 1784, when the Presbytery of Pennsylvania prepared and adopted a "Narrative and Testimony" in addition to the Confession of Faith, without consultation with the home synod. Although, after this, many of its ministers came from Scotland and Ireland, often with a formal appointment, yet from this date, more than before, the Church proposed to educate its own clergy. In 1792, a log-house was built for a theological seminary; a good number of books, contributed largely by friends in Scotland, were placed in Eudolpha Hall; and the Rev. Dr. John Anderson was elected professor. The first of its ministers educated in the United States was licensed in 1795. At the time of the union, the Associate Church had 253 ministers, almost all educated in its own seminaries. The Associate Reformed Church was independent of the mother churches from the beginning. In 1796, its synod resolved to establish a fund to sustain a professor of theology, and to assist students. The fund ($5,000), with avaluable library, was collected, for the most part, by the Rev. J. M. Mason, D.D., in Scotland and England. The seminary was established in New York City in 1804. At the time of the union, it had 231 ministers, almost all American by birth and education. Now (1876) the United Presbyterian Church has three theological seminaries: one at Xenia, Ohio (1855), the legal successor of those at Service, Pa. (1792—1819), at Philadelphia (1821—6), at Canonsburg (1821—55), at Oxford, Ohio (1839—58), at Monmouth, Ill. (1858—74); a second at Newburg, N. Y., which was at first in New York City (1804—21), and was removed to its present location in 1829, where, except an interval of 9 years (1858—67), it has continued in operation; and a third at Allegheny City, Pa., which has received students every year since its establishment, in 1825. Over 500 students have been educated in the third, and over 800, in the others. The endowment fund of Xenia is $30,000; of Newburg, $50,000; and of Allegheny, $80,000. All have good buildings and libraries, numbering 6,000, 5,000, and 8,000 volumes, respectively. Previous to 1852, the Associate and Associate Reformed churches made no attempt to found independent colleges. Their members joined with other Presbyterians in establishing and endowing colleges, as in the case of Jefferson, Canonsburg, Pa. (1802—65), often taking a leading part in the enterprise, and frequently furnishing the presidents, most of the professors and students, and the largest share of the funds. A Presbyterian College was started in Washington, Iowa (1855—64), but was soon abandoned. Ohio Central, at Iberia, Ohio, was, for a time (1867—75), under the control of a presbytery of the United Presbyterian Church; and, under another presbytery, was placed Lincoln College (1872), Greenwood, Mo., Westminster College, New Wilmington, Pa. (1852), established by the Associate Church, and Monmouth College, Monmouth, Ill. (1855), by the Associate Reformed Church, became the property of the United Presbyterian Church in 1858. These institutions have been open, from the first, to both sexes, as well as to colored students. Knoxville (Tenn.) College (1876), costing $20,000, is for the education of colored students. The Freedman's Board of the U. P. Church, organized soon after the slaves were emancipated, reported, in 1876, its receipts for the previous year as amounting to $12,388. The college at Knoxville is sustained by this board, and is designed to furnish teachers and preachers for the Freedmen. In the U. P. foreign mission stations, a large number of boys and girls (about 3,000) are under instruction every day. The Training College, Osiout, Upper Epypt, in 1874, had an attendance of 84 art students and 10 theological students, the whole number being 237. It has also a building and an endowment fund.—No ladies' seminary has been endowed in the U. P. Church, but many excellent schools have been conducted and patronized by the members. The Church has a board of education, which reported to the General Assembly, in 1876, that its total receipts for the year had been $2,673. This board aided 20 young men in preparing for the ministry.

PRIMARY INSTRUCTION. See EDUCATION.

PRIMER (Lat. *liber primarius*, a little book containing the offices of the Roman Catholic Church, so called because used at prime—*prima hora*—the first hour), originally a small book of prayers, or for elementary religious instruction, but, at the present time, an elementary reading-book of the lowest grade. The literature relating to primers, or A-B-C books, is very curious and interesting, some of these books having had great fame on account of their long and extensive use. One of the very earliest was Luther's (or Melanchthon's) *Child's Little Primer*, containing the Lord's Prayer, etc. (See LUTHER.) In 1534, a *Prymer in Englyshe with certain prayers*, etc., was printed by John Byddell; and, in 1545, King Henry VIII. ordered an English *Form of Public Prayer, or Prymer*, to be printed; and to be "taught, lerned, and red" throughout his dominions. Bienrod's primer, containing an illustrated alphabet, was the earliest publication of this kind in German, dating back to the middle of the 16th century. The *horn-book* was the simplest and most noted of primers. (See HORN-BOOK, and CHRIST CROSS ROW.) The *Royal Primer of Great Britain* and the *New England Primer* also had great fame.—See BARNARD'S *Journal*, vol. XII., art. *A-B-C Books and Primers*.

PRINCE EDWARD ISLAND, a British province of North America, formerly (until 1799) called St. John, having an area of 2,175 square miles, and a population, according to the census of 1871, of 94,021. It was under French rule until 1763, when it was ceded, by the treaty of Paris, to the British. In 1873, it became a member of the Dominion of Canada.

The free-school system dates from 1853; but the existing law went into operation in 1868. The lieutenant-governor appoints a board of education, consisting of 11 members, including the two provincial examiners. This board may cancel a teacher's license on proof of misconduct, may alter a school site on the requisition of two-thirds of the householders, and may also alter district boundaries. There are five trustees for each district, elected by the resident householders. Two trustees are elected and two retire annually. The trustees may allow the school-house to be used as a place of worship, and may also permit the teacher to hold an evening school therein. Exclusive of grammar-school masters, there are two classes or grades of teachers. Those of the lower grade must be qualified to teach book-keeping, English grammar, reading, arithmetic, and geography; while those of the higher grade are expected to be proficient in algebra, geometry, trigonometry, mensuration, surveying, navigation, and the use of the globes. If the school of his own district is not in operation, a child may attend the nearest school, unless the attendance there exceeds 50. All residents from 5 to 17 years of age are entitled to attend the district school. The normal school is under the control of the board. A grammar school may be established for two adjoining districts, instead of district schools; but the teacher must be competent to teach Latin, Greek, and French. The salaries of the teachers range from £40 to £100 a year, paid from the provincial treasury. In 1874, there were 355 schools in operation, of which 18 were grammar schools. The number of pupils was 16,292, and of teachers 453. The number of teachers licensed during the year was 46, besides whom the normal school had 27 pupil-teachers. In addition to the public schools, there are several private institutions. A higher education is provided for in two colleges,—Prince of Wales College (Protestant Episcopal), and St. Dunstan's (Roman Catholic).—See MARLING, *Canada Educational Directory for* 1876; LOVELL'S *Gazetteer of British North America*.

PRIZES. See EMULATION.

PROGRAMME. See SCHOOL MANAGEMENT.

PROMOTION. See SCHOOL MANAGEMENT.

PRUSSIA. See GERMANY.

PUBLIC SCHOOLS, Free Schools, or Common Schools, are designations applied to schools established for the free elementary education of all the children in a community or state. The support of such schools, either wholly or in part, by the state, presupposes that it is for the general interest of every community to promote the diffusion of education among all classes. (See NATIONAL EDUCATION.) In ancient times, this principle was recognized by free or democratic states. Sparta based her safety and prosperity upon the proper education of every child in the community; and Athens had public schools for all classes of her free citizens. It was, however, reserved for modern times, and for the free states of the American Union to carry out this principle to the fullest extent, providing gratuitous education, of every grade, for all classes—making common schools not eleemosynary institutions, but seminaries in which the children of the rich and the poor might meet together *in common*, and share alike in the blessings and advantages of education. *Free schools*, so called, that is, "schools for the gratuitous instruction of poor children can be traced back," says Barnard, "to the early ages of the Christian Church. Wherever a missionary station was set up, or the bishop's residence, or seat (*cathedra*, hence *cathedral*) was fixed, there gradually grew up a large ecclesiastical establishment, in which were concentrated the means of hospitality for all the clergy, and all the humanizing influences of learning and religion for that diocese or district." Connected with these, were the *song scoles*, where poor boys were taught to chant, and *lecture scoles*, where clerks were instructed in reading, and subsequently, *grammar schools*, for classical instruction. Convent schools, connected with the monasteries, were the germs of the universities; and the endowments which these schools received from princes and prelates enabled them to afford an education to the children of the indigent as well as to those of the wealthy. (See CATHEDRAL SCHOOLS.) Royal grammar schools were founded out of the old endowments by Henry VIII. (See GRAMMAR SCHOOLS.) "The free schools in

England," says Barnard, "were originally established in towns where there was no old conventual, cathedral, royal, or endowed grammar schools. With very few exceptions, these schools were founded and endowed by individuals, for the teaching of Greek and Latin, and for no other gratuitous teaching. The gratuitous instruction was sometimes extended to all the children born or living in a particular parish, or of a particular name. All not specified and provided for in the instruments of endowment paid tuition to the master." (See ENGLAND.) For the history of public or free schools in other countries, and in the several states of the American Union, see under the respective titles.—One of the most important questions in regard to public schools is, whether the education afforded should be wholly free, or whether, in the case of all children whose parents are able to pay, a tuition fee should be demanded, gratuitous instruction being given to those only who are in indigent circumstances. In many countries, the latter system is in operation. The arguments against it were clearly and forcibly summarized at a meeting of the Birmingham (England) school board, in June, 1875, acting in behalf of the free system: "(1) Because compulsory education is enforced in the interest of the whole community, and will be most effectually and economically carried out under a free system; (2) because the cost of this education is unfairly distributed by any other plan; (3) because the fees act as a direct tax upon attendance, and tend accordingly to prevent the result for which the schools are established, the expense incurred, and the compulsory laws enforced; (4) because the alternative practice of partial exemption is calculated to pauperize great numbers of persons who have hitherto escaped any form of charitable relief." In defense of a free system, many citations, both of opinion and fact may be made. Talleyrand said: "The chief object of the state is to teach children to become one day its citizens. It initiates them, in a manner, into the social order by showing them the laws by which it is governed, and giving them the first of their means of existence. Is it not just, then, that all should learn gratuitously what ought to be regarded as the necessary condition of the association of which they are to become members? This elementary instruction seems to be a debt which society owes to all, and which it must pay without the slightest deduction." This sentiment has been repeated by scores of the best and most liberal thinkers. It is contended that the establishment of free schools by the state is not only proper as an act of justice, but expedient as a measure of policy. England, it has been said, pays for pauperism and crime five times as much as for education; while Switzerland pays seven times as much for education as for pauperism and crime; and, it is contended that wherever free education prevails, there is more freedom, more public and private virtue, and more social and political stability.—It has been said, on the other hand, that universal education unfits the members of a community for the lower and more laborious pursuits of life; at any rate, that it reduces the ranks of the mechanic and day-laborer, and inordinately increases those of the professions, and of those connected with commercial life, thus diminishing the producers and increasing the non-producers. But to this, it is replied that (1) the education of the masses will, under all circumstances, not extend beyond elementary instruction, which will be beneficial in every pursuit, however humble; (2) those who from lowly stations rise to positions of eminence by means of free education, must do so by means of talents the proper exercise of which must be beneficial to the community; and (3) many of those who are denominated non-producers are often the persons who, by their inventions and discoveries, increase the producing power of labor sometimes a hundred-fold. The inventor of the steam-engine, the cotton-gin, or the sewing-machine, might never have done a day's labor in his life; but he certainly would not have been a non-producer on that account. Scotland offers an instructive example of the effects of a free system of education. Dr. L. Playfair, in a speech delivered June 20., 1870, said: "Every peasant in Scotland knows that it is his own fault if he does not acquire such knowledge in his own school as will enable him to aspire to the university Out of 3,500 students at the Scotch universities, about 500 are the sons of wage-making artisans or peasants." A similar state of things exists in nearly all of the United States. There is, however, no lack of peasants or farmers in either country. (See MORLEY, *The Struggle for National Education*, London, 1873.) The educated intelligence and industrial skill, not merely the muscular power of its people, constitute the most important and most productive part of a nation's capital; and this the free school is the most effective instrumentality in maintaining and enlarging. (See CRIME AND EDUCATION.)

PUBLIC SCHOOLS, English. See ENGLAND.

PUNISHMENT. See CORPORAL PUNISHMENT, and FEAR.

PUPIL-TEACHER, a term used, chiefly in England, to designate a boy or a girl employed to perform certain duties connected with the teaching and management of a school. The English *Elementary Education Act of* 1870, requires that "pupil-teachers (1) be not less than 13 years of age, at the date of their engagement; (2) be of the same sex as the certificated teacher under whom they serve, except that, in a mixed school, female pupil-teachers may serve under a master, and may receive instruction from him out of school hours, on condition that some respectable woman, approved by the managers, be invariably present during the whole time that such instruction is being given; (3) be presented to the inspector for examination at the time and place fixed by his notice; (4) pass the required examinations and produce the proper certificates; (5) that not more than four pupil-teachers are engaged in the school for every certificated teacher serving in it.—Such a system is favorable to economy, but cannot be productive of the best results in the teaching of the school. It is an offshoot of the monitorial system (q. v.); and, to some extent, is subject to the same objections. Hence, we find complaints of its inefficiency, arising from the circumstance, inseparable from the system, that "pupil-teachers are regarded too much as teachers, and too little as pupils." A correspondent of the *Schoolmaster* (London, July 17., 1875), writing from personal experience, says: "Schools can frequently be found where 90 or 100 children are placed under a master, who, instead of being supplied with teachers competent to instruct the several classes into which the scholars must necessarily be divided, is only furnished with one, or perhaps two lads, whom he is expected to instruct in the art of teaching, in addition to the ordinary duties of the school." Of course, the pupils, in such a school, must be very imperfectly taught. In December, 1874, there were employed in the public schools of England and Wales, 20,162 certificated teachers, 1,999 assistants, and 27,321 pupil-teachers. The engagement of pupil-teachers is for five years, at the end of which time they may be admitted into a training college, on passing the required examination.— The system of pupil-teachers formerly prevailed in some of the cities of the United States, notably in the city of New York, in which it was continued, in the schools of the Public School Society, for many years. These pupil-teachers, called *monitors*, were, as in the English schools, apprentices, and were expected to attend a Saturday or evening normal school; and, on passing a final examination, were employed as full teachers. This system has ceased to exist in most of the American schools.

PYTHAGORAS, a celebrated Greek philosopher, born on the island of Samos, in 580 B. C.; died in Metapontum, in southern Italy, about 500. He was so enthusiastic in his search for knowledge that he spent 30 years (as is said) in travel, in order to obtain it, visiting Egypt, Phœnicia, Arabia, Babylonia, India, and even Gaul. Too modest to take the title σοφός (wise man), he was the first to assume that of φιλόσοφος (lover of wisdom). "He was," says Schmidt (*History of Education*), "the first Greek in whom the spirit of the East was united with that of the West, and in whom the culture of Babylon, Egypt, and westernmost Asia combined to develop that of the Greeks in a new and glorious form." At Croton, in southern Italy, whither he emigrated about 530 B. C., he established his famous school, and enunciated the doctrines of his peculiar system, the fruit of his researches and contemplations. Of this system, the metempsychosis was a cardinal principle, co-ordinate with that of the purification of the soul (κάϑαρσις), since the former was the necessary agency for effecting this purification ; and the latter, in its ultimate consummation, was designed to bring man into a fit condition to hold communion with the Deity (ὁμιλεῖν τῷ Θεῷ). Self-knowledge he regarded as the indispensable condition for self-improvement — as the basis of all culture, the highest aim of which is to obtain a full understanding of the essence and relations of the objects around us, and to live in harmony with them, and with the true end of man's being. Music (μουσικὴ παιδεία) was in itself one of the most important instruments of this culture, embodying and typifying the harmony of the universe, as well as aiding the soul in its efforts to bring itself into the same harmony. Religious devotion was an important means to consummate this result; and hence he based education upon religion. The good of society could be promoted only by such education, the fruit of which would necessarily be civil and political liberty, because it would produce nobleness of soul in every citizen. His practical system, therefore, comprehended special means for the education of children, as well as the instruction of adults. His school at Croton was, however, designed only for the latter; and its peculiar rules, practices, and arrangements deserve a careful study. — See SCHMIDT, *History of Education* (N.Y., 1872); GROTE, *History of Greece;* SCHMIDT, *Geschichte der Pädagogik*, vol. I.; ZELLER, *Die Pythagorassage* (Leipsic, 1865); UEBERWEG, *History of Philosophy*, trans. from the German (N. Y., 1872).

QUADRIVIUM. See ARTS.

QUEBEC, a province of the Dominion of Canada, having an area of 193,355 sq. miles; and a population, in 1871, of 1,191,516. (See ONTARIO.)

Educational History.—The first school in the province was that of the Franciscan Father Duplessis, at Three Rivers, founded in 1616. In 1632, the Jesuits, who afterward exercised great influence on education, opened their first school in Quebec for the instruction of the Indians; and, in 1635, they founded the Seminary of *Notre Dame des Anges*, which afterward became the Jesuit college of Quebec. For over a century, education remained almost exclusively in the hands of the Catholic clergy. Among the larger schools established during this period, were the convent of the Ursulines, founded in 1639, the Seminary of Quebec, in 1678, and the theological seminary in Montreal, in 1647. In 1653, Sister Margaret Bourgeois founded the order of the congregation of Notre Dame at Montreal, and established a number of schools. The Recollets and Jesuits also supported many primary schools. In 1737, the Christian Brothers undertook the task of popular instruction, but were unsuccessful, owing to the apathy of the government and of the settlers. In 1774, the order of Jesuits was suppressed in Canada, and its estates vested in the Crown. It was not, however, until 1831 that these estates were surrendered to the provincial parliament for the support of education. In 1801, an act was passed providing for the establishment of free schools, under the Royal Institution for the Advancement of Learning. This act produced but slight results; and the Royal Institution, at present, has charge of very little else than of the McGill institutions, and these only by the special desire of their founder.

School Law.—The principal provisions of the present school law are as follows: The estates of the Jesuits form the so-called Superior Education Investment Fund, the revenues of which, together with other moneys appropriated for the purpose, form an income fund, to be distributed among the universities, and all other educational institutions, except the elementary schools. To this fund, $20,000 is annually added from the revenue of the province; and a sufficient amount must be added from the common-school fund, so as to make up the sum of $88,000. The council of public instruction is appointed by the lieutenant-governor, consisting of 16 Roman Catholics and 8 Protestants. The superintendent is president, *ex officio*, and a member of both committees, with a vote in that of his own religion. The council makes rules for schools and examiners, and selects, or causes to be published, the books to be used, except those on religion and morals; and it may hold the copyright thereof, the profits accruing from which go to the income fund. It may, also, revoke a teacher's certificate for sufficient cause. Every municipality elects a board of five commissioners, who hold office for five years. The religious minority in any municipality may dissent; and may nominate, in writing, to the chairman of the commissioners three trustees, who may exercise, in respect to the dissentient schools, the same powers that the commissioners have in regard to the common schools. The commissioners appoint the teachers, and regulate the studies, fees, etc. No other books than those prescribed by the council can be used; but the *curé*, priest, or officiating minister has the exclusive right to designate the books for religious instruction to be used in the schools of his faith. The schools are open for children from 5 to 16 years of age; but a fee may be charged only for those from 7 to 14. Separate schools for girls may be established. Inspectors are appointed by the lieutenant-governor; and, in their visits, have the power of the superintendent, from whom they receive instructions. The resident clergy of the denomination to which the school belongs, the superior judges, the members of the legislature, resident justices of the peace, the warden or mayor, the senior captain and superior resident officers of militia and the superintendent, are school visitors, and, as such, may take part in the examinations of teachers, and have access to all documents. In Quebec and Montreal, the corporation appoints six Roman Catholic, and six Protestant commissioners, one-half to be renewed annually. Otherwise, the same law applies to these cities as to the rest of the province. Any *fabrique*, *i. e.* the *curé* and church-wardens of a parish, may establish one school for every hundred families, and acquire and hold, for each school, property not exceeding $400 in value. Such schools may be placed for one or more years under the school laws, if the *fabrique* and school commissioners agree; and the *curé* or church-warden of any *fabrique* contributing not less than $50 a year to a school under commissioners, may hold the office of commissioner; but no *fabrique* or school can be united with the schools of commissioners of another faith.

Primary Schools.—In 1873, there were 3,254 elementary schools under the school laws, with 141,990 pupils; 4 normal schools, with 246 pupils; 156 independent schools, with 6,261 pupils; 220 dissentient schools, with 7,665 pupils; 129 teaching convents, with 24,236 pupils, and 343 model schools, with 28,588 pupils. Of the dissentient schools, 186, with 6,156 pupils, were Protestant; and 34, with 1,509 pupils, were Roman Catholic. During the same year, 662 candidates for teachers' certificates were examined, of whom 58 were rejected. There were, in 1874, three normal schools; the Jacques Cartier, with 43 male pupils, and the McGill school, with 6 male and 106 female pupils, both in Montreal; and the Laval school, in Quebec, with 43 male and 56 female pupils; making, in all, 254 pupils for the three normal schools.

Secondary Schools.—There are two classes of colleges,—classical and industrial, which occupy a position similar to the high schools of Ontario. They are chiefly boarding-schools, although a few day scholars are also admitted. The course of studies in each comprises those usually taught in high schools. The time necessary to complete the course, varies from 4 to 10 years. The total number of colleges, in 1873, was 37, with 7,113 students.

Universities.—There are three universities,—McGill College and University, in Montreal; the University of Laval, in Quebec; and the University of Bishop's College, in Lennoxville. McGill College was established by a bequest of James McGill, a merchant of Montreal, who died in 1813. By royal charter, which was received in 1821, and amended in 1852, the governors, principal, and fellows of McGill College constitute the corporation of the university; and, under the statutes framed by the governors, have the power of granting degrees in all the arts and faculties in McGill College, and colleges affiliated with it. These are Morrin College, in Quebec; the Congregational College of British North America, in Montreal; and the Presbyterian College of Montreal. Teachers trained in the McGill Normal School are entitled to provincial diplomas. McGill University had, in 1873, 12 professors and 42 students in the legal faculty, 12 professors and 130 students in the medical faculty, and 10 professors and 290 students in the faculty of arts. The University of Laval, in Quebec, was founded in 1852, and received the royal charter the same year. It is governed by the Roman Catholic Church.

The Quebec Seminary is the collegiate department of Laval University. The university had, in 1873, 5 professors and 54 students in the theological, 5 professors and 37 students in the legal, 9 professors and 88 students in the medical faculty, and 19 professors and 97 students in the faculty of arts. The University of Bishop's College, in Lennoxville, is governed by the Protestant Episcopal Church. It was opened in 1845, and, in 1853, received the royal charter which gave it university powers. It had, in 1873, a theological faculty, with 5 professors and 54 students, and a faculty of arts, with 9 professors and 88 students. A medical faculty has been organized since that time. There is also a large number of professional colleges and collegiate schools.—See Marling, *Canada Educational Directory and Yearbook for* 1876; Lovell's *Directory of British North America* (1873); Chauveau (formerly minister of public instruction in Quebec), in Schmid's *Encyclopädie* (2d ed., 1876), art. *Canada.*

QUESTIONING. See Interrogation.

QUINTILIAN (*Quintilianus*), **Marcus Fabius**, a Roman teacher and educational writer, was born probably in Calagurris, Spain, in 40 A. D.; died about 118. He was the first public teacher of oratory at Rome, receiving a regular salary from the imperial treasury, and continuing his instruction for about 20 years. His principal work, *De Institutione Oratoria Libri* XII, called also *Institutiones Oratoriæ*, is of considerable importance in the history of education, as the first and second books contain Quintilian's views on all important educational questions. He insisted that the education of the child should begin with the nurse, who should teach the child a correct pronunciation. He strongly recommended public schools in preference to private schools. The study of Greek should begin before that of the native language (Latin); and the course of instruction should embrace reading, writing, grammar, music, and geometry. Elocution should be taught by an actor. The educational principles commended by Quintilian, have, however, only the training of good rhetoricians in view.—See Pilz, *Quintilian, ein Lehrerleben aus der römischen Kaiserzeit* (Leipsic, 1863); Barnard's *Journal of Education*, vol. x. and xi.

RABANUS (*Hrabanus* or *Rhabanus*) **Maurus**, one of the greatest scholars of the middle ages, born about 776, died in 856. He received his education partly in the monastery of Fulda, and subsequently studied at Tours, where he became the favorite pupil of Alcuin. Having returned to Fulda, he assumed the direction of the convent school. When he was elected abbot of Fulda, in 822, he gave up the instruction of the non-clerical, but continued that of the theological, students. The school of Fulda became, through him, one of the most famous of the age. Young men from Germany, France, and Italy flocked to it in great numbers, and its pupils were eagerly sought for as good teachers. Rabanus has frequently been called the first teacher of Germany (*primus præceptor Germaniæ*), not only because he instructed large numbers of young men, through whom learning was spread throughout that country, but also because he was the first to instruct in the German language, and to establish a school for other than clerical students. Among his numerous works, was a kind of encyclopædia of knowledge, entitled *De Universo*, which exerted considerable influence upon the progress of education in the middle ages. — See Kunstmann, *Rabanus Magnentius Maurus* (1841); Bach, *Ueber Rabanus Maurus, als Schöpfer des deutschen Schulwesens* (1835); Spengler, *Leben des heiligen Rhabanus Maurus* (1856).

RACINE COLLEGE, at Racine, Wis., founded in 1852, is under Protestant Episcopal control. It has a classical and a scientific course, with a classical and a mathematical school as preparatory institutions. The regular charge for tuition, board, etc., is $400 per year. The library contains 3,000 volumes. In 1874—5, there were 18 instructors and 180 students (35 classical, 10 scientific, 102 in the classical school, and 33 in the mathematical school). The Rev. James De Koven, D.D., is (1877) the warden.

RAGGED SCHOOLS. See Reform Schools.

RAIKES, Robert, an English printer and philanthropist, born at Gloucester, 1735; died April 5., 1811. His attention was specially directed to the condition of the children of the poor, on taking a walk one Sunday through the suburbs of his native place. He engaged four women, keepers of dame schools, to instruct as many children as he should send to them on Sunday, for which they were to receive a shilling each. The children came in large numbers, causing a marked improvement in the manners and morals of the place. In these efforts, he was greatly aided by the Rev. T. Stock. This was the origin of our present Sunday-school. By means of publications, notably that of a letter of Mr. Raikes in the *Gentleman's Magazine*, in 1784, public attention was called to his scheme; and the system was adopted in all the principal towns and cities, and spread rapidly through Great Britain, even attracting the attention of the queen, who expressed her approbation to Mr. Raikes in person. The first obstacle he encountered was a want of funds to pay the teachers. This was soon overcome by the teachers' offering their services gratuitously. The secular teaching, which was a part of the original Sunday-school system, was discontinued, with the exception of reading which, for a long time, held its place. In course of time, however, week-day schools becoming general, this was given up; and the Sunday-school, as we now know it, took its place among recognized educational agencies. From that time, its spread has been rapid and uninterrupted; and throughout Great Britain and the United States, the Sunday-school is now the constant attendant of the church. — See *Sketch of the Life of Robert Raikes and the History of Sunday-Schools* (New York); and W. M. CORNELL, *Life of Robert Raikes* (New York, 1864). (See also SUNDAY-SCHOOLS.)

RANDOLPH MACON COLLEGE, at Ashland, Va., chartered in 1832 and organized in 1834, is under the control of the Methodist Episcopal Church, South. It has productive funds to the amount of $25,000, extensive philosophical and chemical apparatus, a cabinet of minerals, and libraries containing 11,000 volumes. The course of study is distributed into separate schools, including schools of Latin, Greek, English, French, German, pure mathematics, applied mathematics, natural science, chemistry, physiology and hygiene, moral philosophy and metaphysics, Biblical literature, and oriental languages. The degrees conferred are Graduate in a school, Bachelor of Science, Bachelor of Arts, and Master of Arts, the last three requiring graduation in several schools. A handsome new lecture hall has recently been erected. This, with the other buildings, now planned, and an additional endowment fund, will considerably increase the facilities of the institution. The tuition fee for three or more schools is $75 per year. Candidates for the ministry are exempt from the payment of tuition fees. In 1875—6, there were 11 instructors and 235 students. The Rev. James A. Duncan, A. M., D. D., is (1876) the president.

RATICH, Wolfgang, a distinguished German educator, was born in 1571, at Wilsten, in Holstein, and died in 1635, at Rudolstadt. A difficulty in his speech compelling him to give up the design of becoming a preacher, he applied himself to the study of the Hebrew and Arabic languages, and mathematics. He claimed to be the inventor of a new system of instruction, vastly superior to the prevailing ones. In 1612, he addressed a memorial to the Diet at Frankfort in behalf of his system, in which, he asserted, that not only could old and young in a short time easily learn Hebrew, Greek, Latin, German, philosophy, theology, and the arts and sciences, but that uniformity of language and religion could be introduced into the whole empire. Several princes were led to interest themselves in his scheme. Professors Helwig and Jung, of Giessen, and Granger, Brendel, Walter, and Wolf, of Jena, were invited to investigate it. They judged it excellent in theory, and made a favorable report upon it. Ratich agreed with Prince Ludwig, of Anhalt-Köthen, and Duke John Ernest, of Weimar, to instruct children by his new system, and also by it to qualify teachers to give instruction in any language in less time, and with less labor, than by any other method used in Germany. A printing-office was furnished him in Köthen, and his books were printed in six languages. A school was established for him, with 135 scholars. But Ratich proved incompetent to give practical effect to his theories. He became unpopular, and, being an earnest Lutheran, fell under the ban of the religious prejudices of a community attached to the Reformed faith. His school failed, in a short time. Prince Ludwig quarreled with him, and, in 1619, imprisoned him; but released him in 1620, upon his giving a written declaration that "he had claimed and promised more than he knew, or could bring to pass." His system was now attacked by some who had been his friends. The Countess Anna Sophia von Schwarzburg-Rudolstadt, however, recommended him to the Swedish chancellor Oxenstiern; and, at the request of that statesman, Drs. Brückner, Meyfart, and Ziegler having examined his method, made a favorable report upon it, in 1634.—Ratich, without doubt, had a practical conception of the objects of education. He preferred to give instruction in those branches which could be made useful in life, rather than to pay so much attention to the dead languages. In his memorial to the Diet at Frankfort, he held that the child should first learn to read and speak the mother-tongue correctly, so as to be able to use the German Bible. Hebrew and Greek should then be learned, as the tongues of the original texts of the Bible, after which Latin might be studied. His views were embodied in a number of rules, or principles, the chief of which are: (1) Every thing should be presented in its order, a due regard being always had to the course of nature; (2) Only one thing should be presented at a time; (3) Each thing should be often repeated; (4) Every thing should be taught, at first, in the mother-tongue; afterward, other languages may be taught; (5) Every thing should be done without compulsion; (6) Nothing should be learned by rote; (7) There should be mutual conformity in all things; (8) First the thing by itself, and afterward the explanation of it; that is to say, a basis of material must be laid in the mind before any rules can be applied to it; thus, in teaching grammar, he gave no rules, but began with the reading of the text, and required that the rules should be deduced from it; (9) Every thing by expression, and the investigation of parts. In his *Methodus*, he has left minute directions to teachers concerning the details of the course, and the proper methods of instruction; but they are very prolix, and impose an immense amount of labor on the teacher, without seeming to call for a corresponding degree of exertion on the part of the pupil. Comenius, after reading his book, remarked that he "had not ill displayed the faults of the schools, but that his remedies were not distinctly shown." Ratich's works were written in Latin, and are diffuse, tedious, and somewhat pedantic.

RAUMER, Karl Georg von, a German professor and author, born in Wörlitz, April 9., 1783; died in Erlangen, June 2., 1865. He was educated at Göttingen, Halle, and Freiberg, and was appointed to a position in the mineralogical bureau in Berlin, in 1811; and, shortly after, to that of professor of mineralogy in the university of Breslau. He acted as aid to Gneisenau in the campaign of 1813—14 against the French. From 1819 to 1823, he was a professor in the university of Halle, and afterward taught in Nuremberg till 1827, when he received the appointment of professor of natural history and mineralogy in the university of Erlangen. He is chiefly known by his geographical and geological works; but his principal claim to the attention of educators is his *Geschichte der Pädagogik*, or *History of Pedagogy*, published in 4 volumes (Stuttgart, 1846—55). An English translation of the larger portion of this work has appeared in BARNARD'S *Journal of Education;* also, separately, under the title *German Educators.*

READING, as the basis and instrument of all literary education, is the most important branch of school instruction. After the child has learned to talk, he may be taught to understand, and to give vocal expression to, such written language as is adapted to his degree of mental development. To do this involves an association, in the mind, of the printed form of the word (1) with its proper sound, or pronunciation, and (2) with the idea which it is intended to express. In teaching children to read, the first of these processes requires the principal attention; but, as progress is made, the second constantly increases in importance. The word, and not the letters composing it, is the true element in reading. No one can be said to know how to read who is obliged to stop at the word, and study its composition, before he can pronounce it. The due meaning and pronunciation of every word must be immediately recognized by the mind, without pause or hesitation, in the act of reading. But the word is made up of separate characters, representing elementary sounds; and hence arises a diversity of methods in teaching children to pronounce words. The *alphabet method*, or *A-B-C method* (q. v.), requires that the child should learn the names of all the letters of the alphabet, and then, by means of a spelling process, learn the proper pronunciation of their combinations. This process is condemned by most teachers of the present time, as long and tedious, as well as illogical; the method most generally preferred being that denominated the *word method* (q. v.), by which the child learns at once to pronounce short words, and is taught the sounds and names of the letters, by an analysis of them. When the sounds of the letters are used instead of the names, the process has been called the *phonic method* (q. v.), which, in modern didactics, is most generally approved. Certainly, it is more rational to expect that a child will perceive the true pronunciation of a word through an analysis of the sounds of the letters, than by using their names, many of which afford no key to the sound. For example, if the word be *cat*, the child reaches the pronunciation at once by enumerating the sounds *k-ă-t*; while by spelling, he is obliged to say *se-ā-te*, introducing sounds entirely foreign to the word. In the one case, the mental association required is simple and direct; in the other, it is complex and indirect. It is true that, by long and diligent rote-teaching, children learn to read by the latter method; but the question arises, are they not to a certain extent unfitted for other instruction by so illogical a process? Auxiliary to the *phonic method*, and, indeed, dictated by its needs, is the *phonetic method*, in which the absurd contradictions of the alphabet are removed by using the letters slightly modified, so as to have a character for each separate sound, and each sound represented by one, and only one, character. (See ORTHOGRAPHY, and PHONETICS.) These various methods are dictated by what may perhaps be called the mechanics of reading; but, in connection with that, the teacher must always bear in mind, that what the child is learning to pronounce is a symbol of thought; and, hence, at every step, the pupil's understanding is to be addressed. Reading, as a part of education, has a twofold object: (1) to understand what is read; and (2) to give proper oral expression to it; that is to say, reading is either for the purpose of gaining information for one's self, or for imparting information to others. To teach a pupil to read properly implies far more than correct elocution. It implies the development of that judgment and spirit which, being brought to the perusal of useful books, or other reading matter, will enable the student to gather up information, and, in every available manner, make the realm of books tributary to his own mental wants. Hence, as auxiliary to reading, the proper meaning of words, phrases, and idioms must be taught; and exercises must be employed for the purpose of ascertaining to what extent the pupil has received correct ideas from what he has read. When the object is to teach the pupils elocution, the exercises should be specially adapted to that end. Thus, the pupil, having read in order to understand for himself, should be required to read the same passage for the information of his fellow pupils. For this purpose, it has been recommended, in class teaching, to permit only the pupil reading to use the book, all the others being required to listen; because, in this way, the pupils will be on the alert to hear and know the meaning of what is read, and will, besides, better appreciate the true end of reading; while, on the other hand, the one reading will endeavor to pronounce correctly, enunciate distinctly, and emphasize naturally. Reading-books should be constructed with a special reference to the accomplishment of this object; and hence, the lessons should be adapted, at each stage, to the mental status of the pupils. Moreover, the material should not consist of mere fragments, without any logical continuity; but should be of such a character as to discipline the mind in connected thinking upon suitable subjects, and to awaken an interest in the minds of the pupils. Usually, this essential object of reading in schools is defeated by the use of extracts from essays on difficult, abstract subjects, or from authors whose style is too complex, and whose vocabulary is too ponderous for children. Simultaneous reading is commended by some teachers as an elocutionary drill, as being useful (1) to impart habits of distinctness of enunciation, (2) to remove the habit of too rapid or too slow a style of reading, (3) as a means of voice culture for elocution.—See Currie, *Principles and Practice of Common-School Education;* Wickersham, *Methods of Instruction; How to Teach* (N. Y., 1874). (See also Elocution, and Voice.)

REAL SCHOOL, or **Real Gymnasium,** the name used in Germany to designate a kind of high school. This term was used as early as 1706; but the first permanent real school was founded by J. J. Hecker in 1747. (See Germany, and Hecker.) The real schools are utilitarian in character, and aim to teach, like the scientific departments of the American college, only those branches designed to develop the *practical* man. They are strictly the people's schools, and aim to fit especially for occupation in trade and industry. Hence they are sometimes called higher burgher schools. Their course of study is more advanced than that of the elementary and common schools; and they should always bear the name, as they do in some instances, *real gymnasia,* because they are the preparatory schools for institutions affording to the would-be merchant, artist, artisan, etc., advantages like those offered by the classical gymnasia to the future theologian, lawyer, physician, etc. The *realists* claim that the gymnasium is a preparatory school for the patient toiler in investigation, giving a training unfit for practical life; but that the real schools meet this want by educating the boy to become a *practical* man, not a *scholar.* They pay less regard to verbal knowledge, but more to mathematics and its application to the arts, and arrange the whole course so as to facilitate the development of those mental habits which are favorable to the highest practical success, and yet provide an adequate intellectual culture. According to the Prussian school regulation, their purpose is to afford a scientific preparatory training for those higher pursuits which do not absolutely require academical studies under any special faculty. The Prussian government, though it has refused to support these schools, obliging the towns in which they are located to maintain them, has recognized their efficiency by permitting, since 1871, graduates of those of the first order to be received into the different branches of the civil service, and to be relieved from military duty, like gymnasia students, after one year's service, instead of three, with the privilege of advancement to the commissioned ranks in case of mobilization. Since the unification of the German nation, the schools of this order in the different states are being brought to a standard harmonious with the Prussian. Those of northern Germany are quite well regulated; those of southern Germany are slowly but steadily improving.—The general division and management of the real schools of the *first* order are the same as those of the gymnasia. The course of study extends over nine years and through six classes. The average age of admission is nine years, and of discharge, eighteen. The attention which the gymnasium gives to the *classical* languages, the real school pays to the *modern.* While the former schools teach only French, and merely enable the learner to read it without a dictionary, and to compose in it with moderate ease; the latter, substituting English for Greek, give the learner a good knowledge of both French and English. Thus, the same familiarity which the classical student acquires with the history of ancient literature, the *realist* acquires with modern literature. While ancient history is not ignored, the events of the last three centuries, and the political changes which brought about the present status of civil society are carefully considered. Far greater attention, also, is paid to the exact sciences. There are some real gymnasia whose students are exempt from the restrictions put upon the graduates of the real school. They teach Greek, though less of it than the classical gymnasia, and permit the substitution of a modern for a classical language, in the last two years of the course, or, at least, for Hebrew, which is an elective study in all the Prussian gymnasia. Of the real schools of inferior order, the so-called higher burgher school has a course extending through only seven years, the *prima,* or highest class, alone requiring two years; while all other classes require one year's attendance. The real schools of the second grade provide, in their lower classes, for elementary and common-school training. They also permit a deviation from the regular course, and provide for elective studies, among which is Latin; but some exclude Latin altogether. These schools are certainly misnamed; they are, really, of the third grade, and the higher burgher schools are of the second grade. In 1875, an effort was begun to modify the course of the gymnasia so as to admit of a choice of classical or scientific study, in order to do away with the real schools; but the probability is that the last-named schools will continue in their present organic form, possibly so modifying their course of study as to ignore the wants of the civil service, to which hitherto more or less attention has been paid, and to secure greater efficiency of training for mechanical and commercial pursuits. In Germany, there are now about 300 real schools of the first order, and 600 of the inferior grade. In the German provinces of Austria, there are 37 of the first grade, and about 100 of an inferior grade. Real schools have been generally established in Switzerland, the Netherlands, and very recently, in Russia, where they are rapidly increasing.—See Mager, *Die deutsche Bürgerschule* (Stuttgart, 1840); Loth, *Die Realschul-Frage* (Leips., 1870); Kreissig, *Ueber Realismus und Realschulwesen* (Berl., 1872), fair, critical, and complete; Gallenkamp, *Die Reform der höheren Lehranstalten* (Berl., 1874); Schmidt, *Geschichte der Pädagogik,* vol. II.; and, especially, Barnard, *German Teachers and Educators.* Against their maintenance, see Laas, *Gymnasium und Realschule* (Berl., 1875).

RECESSES. See HYGIENE, SCHOOL, and SCHOOL MANAGEMENT.

RECITATION, a term used in American colleges and schools, to denote the rehearsal of a lesson by pupils before their instructor, or the repetition of something committed to memory. The manner in which the teacher should conduct the daily recitations of his class is a matter of very great importance, since apparently perfect recitations may be gone through with which not only have little educative value, but may even be productive of positive harm to the mind of the pupil. The surest guide, in this respect, is that which is derived from a consideration of the essential meaning of the word education, no method of recitation having any value which does not keep constantly in view the development of the pupil's mental powers. It should always be remembered by the teacher that the supreme object of the recitation is to accustom the pupil, by daily practice, to use the faculties of which he is possessed. Many a so-called recitation results, by too much explanation on the part of the teacher, in a reversal of the functions of the teacher and his class—the former reciting to the latter, instead of the latter to the former. The passive attitude of mind in which pupils listen to a long explanation is the very attitude from which they need to be roused. There are two stages in the development of a mental power as produced by the exercises of the class room: (1) the knowing what to say; and (2) the saying of it. The first stage the pupil is supposed to have reached by the study of the lesson; the second, and most important one, is not passed through by the pupil in the case above supposed. Of far greater service is it, therefore, to the pupil, to be allowed to state the result of his study in his own language, halting and imperfect though it be, than to compel him to listen to an exposition by the teacher. Under the first condition, it will be apparent, at every step, whether he really understands his lesson; and, if he does, every day will add to the copiousness of his vocabulary, and his ease of mental action, and give to his recitation its highest educative result; while, under the second—the condition of a "passive recipient",—there will always be apparent to every discerning person, an inexact apprehension of the thought presented, a certain degree of insincerity, strengthened into a mental habit through fear of ridicule, and mental powers "rusting in disuse". Even apt pupils, under such conditions, will become, at best, theorists or dreamers—critics, ready to pass judgment upon others' performances, but powerless to act for themselves. The utmost that can be claimed for this method is, that a single faculty, that of memory, has been cultivated; while this cultivation has been accomplished not only by the neglect, for the time being, of the other powers, but at their expense; since the pupil is daily becoming confirmed in the idea that they are properly exercised, and, by pursuing all future studies in the same way, acts to their permanent injury. It is not intended by this to discountenance the explanation of those difficult points which will always occur, sometimes through a feebleness of the pupil's understanding, and at others through a failure of the text-book to supply a link necessary to the continuity of thought. Such explanations are legitimate, and should be made in language suited to the pupil's comprehension; the most thoughtful educators agreeing in this, that one of the gravest errors on the part of the teacher is an explanation in terms so unfamiliar as to be unintelligible, or so as to leave on the mind of the pupil only a vague and unsatisfactory impression. One of the most conspicuous merits of an able teacher is his ability to explain, in concise and simple language, the difficulties which necessarily beset the paths of his pupils. But it must always be borne in mind that one of the greatest merits of a recitation is to compel the pupil to discover and present for himself the difficulties which he has encountered.—The method of *simultaneous recitation* is open to the objection that by it the errors of backward pupils—and those, therefore, who are most in need of instruction—are concealed under the readiness of the more forward. The result usually anticipated from this method, *i. e.*, a quickening of the mental powers of backward pupils under the spur of emulation, does not appear in practice. Says an eminent teacher, "Simultaneous recitation may sometimes be useful. A few questions thus answered may serve to give animation to a class, when their interest begins to flag; but that which may serve as a stimulant must not be relied on for nutrition. As an example of its usefulness, I have known a rapid reader tamed into due moderation by being put in companionship with others of slower speech, just as we tame a friskful colt by harnessing him into a team of grave old horses. But aside from such definite purpose, I have seen no good come of this innovation." Though this method is resorted to often from necessity in large schools, its operation should be carefully watched. It is open, also, to the objections common to all rote teaching, the answer committed to memory from the book being never so sure an indication of the pupil's apprehension of the meaning, as his answer, before the class, in his own language. This latter furnishes not only an accurate register of the pupil's real progress, but is a mental exercise of the highest value, since it leads to accuracy of conception and expression, and increases the power of continuous thinking. (See CONCERT TEACHING.)—The first requisite for skillfully conducting a recitation is a thorough preparation by the teacher for the particular lesson he is to hear, so that he may be able to follow each step taken by the pupil, and may stand ready, at any moment, to supply the needed word in which the pupil is striving to embody his thought. This word, in case the pupil's conception of the idea is correct, but its expression unfamiliar, will usually be some simple generic one for which the special or technical word may properly be substituted by the teacher. Another point to be remembered is the *order in which the* *different parts of a subject are presented.* Where these parts depend upon each other by a natural progression, as they frequently do, a skillful teacher will so order the recitations of a class that those parts of the subject which are the natural stepping-stones to other parts, shall be presented first, such an arrangement conducing powerfully to a correct comprehension of the subject as a whole. In some studies—in the natural and exact sciences, almost always—this method is absolutely necessary; but, while in other branches its value is not so apparent, the advantage to be derived from its adoption is generally considerable.—A thorough comprehension by the pupils of the subject under consideration will insure the maintenance of three other conditions necessary to success in teaching, and usually quite strenuously insisted on by writers on the subject; namely, *animation*, *attention*, and *a natural tone*. When pupils understand what they are reciting, their attention and animation are, by that fact, made certain; and a natural tone is instinctively adopted. In youth, the appetite for new truths is so eager, the exultant feeling which accompanies the conquest of difficulties is so keen, that the reflection of this in the voice and manner of the pupil is a matter of certainty. Indeed, their opposites, — inattention and want of animation, are generally considered by educational writers as an indication of a want of comprehension—as the sure test by which the teacher may, at any moment, judge of the success of his instruction. The *length of recitations* has been more carefully considered during the past few years than ever before, the weight of authority having constantly inclined to a diminution of the time considered proper for this purpose only a generation ago. Currie, for example, considers that fifteen minutes is the proper medium for classes of very young children, twenty being the maximum; while half an hour is the average for classes generally, the fixing of the attention for a longer period not being attended with profit. In classes of older children, and in advanced instruction, the time of recitation may, of course, be considerably prolonged beyond these limits, the principle, however, being still carefully observed.—D. P. Page says on this subject: "As a motive for every teacher to study carefully the art of teaching well at the recitation, it should be borne in mind that then and there he comes before his pupils in a peculiar and prominent manner; it is there his mind comes specially in contact with theirs, and there that he lays in them, for good or for evil, the foundations of their mental habits. It is at the recitation in a peculiar manner that he makes *his mark* upon their minds; and as the seal upon the wax, so his mental character upon theirs leaves its impress behind."—See D. P. PAGE, *Theory and Practice of Teaching* (N. Y., 1854); CURRIE, *Common School Education*, and *Early and Infant School Education* (Edinburgh, 1857); LE VAUX, *The Science and Art of Teaching* (Toronto, 1875); and J. P. WICKERSHAM, *School Economy* (Phila., 1868).

REFORM SCHOOLS, or **Reformatories**, are institutions founded for the purpose of reclaiming children who, from various causes—neglect, early subjection to evil influences, innate depravity, etc., — have entered upon a career of vice or crime. Such schools strive not only to prevent the youth from committing offenses which must be dealt with by law, but to educate him so that his influence shall be active for good. Though the name *reform school* has been somewhat loosely applied to various houses or institutions for reclaiming children or youth from evil courses, an important distinction exists between such institutions and the reform school proper. Notwithstanding this strict definition, however, the term will be used in this article to designate all institutions whose object is, by active educational means, to reclaim their inmates whether under judicial sentence or not. The manner in which this reclamation has been effected in different countries, furnishes an interesting chapter in the history of human ingenuity and philanthropy. The history of reform schools in Germany begins with the Reformation, when work-houses were established in Amsterdam, Leyden, Hamburg, Lübeck, and other cities, for the purpose of giving occupation to those who were prohibited from vagrancy by laws then first enacted. Young thieves were placed in the care of the magistrate to receive religious instruction, and every work-house was provided with a special department in which refractory children were placed for discipline. Parents were permitted to send there obstinate or froward children to undergo treatment, either gratuitously or for a small charge, which entitled them to certain privileges. The benevolent movement thus begun soon led to the establishment of houses of correction, industrial schools, orphan houses, and kindred institutions, all differing somewhat from the reform school and from each other, but all springing from substantially the same idea —the rescue of children from a condition, actual or prospective, of vice or crime. The originator of the modern reform school in Germany was J. D. Falk, who formed a society, called *Friends in Need*, which, in 1818, had found homes for 300 children, to whom elementary instruction was given in religion and industrial branches. The institution thus founded at Weimar was named Lutherhof, and was followed by the establishment of similar ones in Erfurt, Goldberg, and Lüben. Contemporaneous with the institution of Falk were those of Overdyk and Düsselthal, founded by Counts Adalbert and Werner von der Ricke, which are still in existence, and have an average attendance of 300 children. The reform school of Beuggen, in the southern part of Baden, was founded in 1816. It was the first school of the kind in southern Germany, and was followed by one in Neuhof, and a reform school for girls in Erlangen. The first reform school in Berlin was opened in 1825, and has recently been very much enlarged. It is the model on which similar institutions have been organized at Memel, Frankfort on the Oder, Posen, Königsberg, and Stettin. The foundation of houses of correction, however, by the government, has caused the disappearance of all these later institutions except that at Stettin. A house of correction was founded in Hamburg, in 1829. At the present time, there are 12 houses of this class in Prussia, 3 in Saxony, 1 in Würtemberg, 1 in Hamburg, and 1 in Bremen. A reform school was established in Lichtenstein, in 1836, and another in Tempelhof, in 1843 — both in connection with the normal schools in those places. There is also a central school of this class at Reutlingen, with 7 associated schools or branches. It appears that Würtemberg has done more in this direction than any other German state. In 1867, it contained 32 reform schools: 26 Protestant, 5 Catholic, and 1 Jewish, with accommodations for 1,667 children, and an actual attendance of 1,269. Many societies exist for the purpose of bringing neglected children into homes and schools, all of which work under the direction of a central committee of charity. In Switzerland, 7 farm and reform schools were established between 1810 and 1830; from 1830 to 1840, 12 more were founded; from 1841 to 1846, 10 more; and from that to the present time, 15; so that now Switzerland has 44 schools of this kind, with 1,543 pupils. In Baden, in 1843, a Protestant school was founded at Durlach, and a Catholic one at Mariahof, the pupils in each numbering about 50. The most celebrated of these reform schools, however, was the Rauhes Haus, formed in Hamburg by J. H. Wichern, in 1833. As this has been for a long time a model for schools of the kind, a short account of its organization and management will not be out of place. In 1833, J. H. Wichern went, with his mother, to live on a small, rudely cultivated farm near Hamburg, taking with him, in accordance with a vow made to companions in a home missionary society, 12 boys gathered from the worst haunts of vice and misery in the city. The organization naturally suggested to him by the circumstances, was that of the family; his mother personating the mother of the family, and himself the father. Here the boys received elementary instruction, mental and religious, and were trained to labor on the farm. The project attracted general attention; and, from time to time, other cheap houses were built, some for boys, and some for girls, each to accommodate about the same number of inmates, till, in time, the rough farm was converted into a little village with its church, school-house, workshops, and gardens. This was the origin of the "family plan," since adopted in reformatory institutions in many parts of the civilized world. The fundamental idea of the Rauhes Haus, however, originally proclaimed and never lost sight of, was that of missionary work among poor and neglected children. It became at once a training school for missionaries. The heads of families, teachers, overseers of workshops, etc., formed a religious brotherhood known as the Brotherhood of the Rauhes Haus, the members of which, after serving an apprenticeship in this simple community, where poverty was their lot, and devotion to duty their only reward, went out into the world as missionaries, particularly among the poor. From its foundation to 1867, the Rauhes Haus had received and educated nearly 800 children, the average annual attendance being about 120. The number of persons connected with the establishment, in the year mentioned, was 450. The whole number of reform schools in Germany, in 1867, was 354. The influence of the Rauhes Haus has been very great, reformatory institutions on the family plan having been established in Russia, Switzerland, France, Belgium, Sweden, England, and in many of the states of the American Union.—The first reform school in England was founded near London by the Philanthropic Society, in 1788. This was followed by one in Warwickshire, in 1818, in which outdoor labor was first made a part of the training. In 1830, another school was established by Captain Brenton, who believed that no person under the age of 16 should be sent to prison. His institution, however, and that in Warwickshire were closed for want of support. In 1834, a reformatory school for girls was established at Chiswick, to which the name of The Victoria Asylum was given. In 1838, a separate prison was established at Parkhurst for prisoners under the age of 16, the discipline in which was reformatory rather than penal. The institution founded by the Philanthropic Society at St. George's in the Fields became, through lack of interest in its success, at first a poor-house, and afterwards a penitentiary; and, in 1850, was discontinued, its property being removed to Redhill in Surrey, where, on the family plan, it now constitutes the largest reformatory in England. Since that time, schools have been established at Hardwicke Court, Kingswood, Stoke Farm, and Saltley. In 1854, the Reformatory Schools Act was passed, magistrates being authorized to commit to reform schools youths under 16 years of age, for not less than 2 nor more than 5 years, making an allowance in each case for their maintenance. In Scotland, industrial schools were established, at the same time, for destitute and vagrant children under 14 years of age. In 1856, there were 34 reform schools in existence in Great Britain; and, in 1863, there were 64 in existence, with an attendance of 4,677, of whom 1,000 were girls. The English law divides reform schools into two kinds: reform schools proper, intended for correction; and industrial schools, intended for prevention, admission to one or the other being determined by differences in age and previous condition in regard to crime. In 1873, there were in Great Britain 45 reformatories for boys, and 20 for girls, with 4,424 inmates in the former, and 1,151 in the latter. The number of industrial schools at the same time was 100, with an attendance of 7,598 boys, and 2,587 girls. — In England and Scotland, there is another class of reform schools, called *ragged schools*, designed to bring together and instruct poor and neglected children—generally boys, and thus prevent them from falling into vice and crime. The idea of such schools is attributed to John Pounds, a poor shoe-maker of Portsmouth, who, in 1819, commenced to gather around him the ragged children of his district, in order that he might instruct them as he sat at work; and in this benevolent task, he continued till his death, in 1839. A more effective movement in that direction was commenced by Sheriff Watson, of Aberdeen, in which city a ragged school was opened in 1841; but there was a large Sunday-school of this kind in London, in 1838; and the Field Lane school was opened in 1843. Through the systematic efforts of the Ragged School Union of London, a large number of such schools have been established. These include day and evening schools and Sunday-schools. Similar schools under different names have been organized in other countries.

In France, reform schools are known as correctional and penitentiary colonies. Some are founded and supported entirely by the state, others, by individuals, under government sanction. The maximum age is 16. The penitentiary colony receives children who have committed crime through ignorance, and who are acquitted, therefore, from want of evidence of criminal intent, but are thought to require special training, and young prisoners sentenced for more than 6 months but not more than 2 years. The correctional colony receives prisoners sentenced for more than 2 years, and insubordinates from the penitentiary colony. In 1862, there were 36 colonies for boys, and 25 for girls; the number of inmates being 6,604 boys, and 1,878 girls. The most successful of the French reform schools is that at Mettray, founded by Demetz, in 1839. The inmates are divided into families of 50; the average number in the school or colony being, at the present time, 700. Agricultural and mechanical labor is carried on, the colony being, in large measure, self-supporting. Less than 4 per cent of those who have left the colony have relapsed into crime. The success of the school is largely attributed to the correspondence and supervision kept up between it and the pupils after they have left. The number of similar organizations founded after the example of Mettray is 411.—In Belgium, agricultural reform schools exist at Ruysselede, Wynghene, and Beernem. They form practically one institution, the object of which is the reclamation of juvenile delinquents of both sexes, who are not criminals.—In the United States, the name usually given to the reform school is *house of refuge*. The oldest institution of the kind is that on Randall's Island, N.Y., which was founded in 1825. It is the largest reformatory of its class in the United States, the average number of its inmates being 800. They are of both sexes, and are sent to the institution upon conviction for petty offenses. Their discipline consists of daily labor for 6 or 8 hours, and study for about 3 hours. The period of detention depends upon their conduct; and, on their discharge, homes are found for the more deserving. The house of refuge in Boston was opened in 1827; that in Philadelphia, in the following year; and that in New Orleans, in 1847. The establishment of reformatories as state institutions was first made in Massachusetts, in 1848, the state reform school at Westborough being then established. Since that time, individuals, cities, and several of the states, have established schools, many of them on the family plan. A list of such institutions existing at the present time in the United States, is given in the subjoined table:

Reform Schools in the United States.

NAME	Location	When founded	Control
City and County Industrial School	San Francisco, Cal.	1858	
Connecticut Industrial School for Girls	Middletown, Ct.	1870	Corporate
" Reform School	W. Meriden, Ct.	1854	State
St. Mary's Reformatory	Chicago, Ill.	1863	—
State Reform School	Pontiac, Ill.	1871	State
Indiana Reform Institute for Girls	Indianapolis, Ind.	1874	State
House of Refuge	Plainfield, Ind.	—	State
Iowa State Reform School	Eldora, Iowa	1868	State
State Reform School (girls)	Salem, Iowa	—	—
House of Refuge	Louisville, Ky.	1865	Municipal
Boys' House of Refuge	New Orleans, La.	1850	Municipal
State Reform School	Cape Elizabeth, Me.	1852	State
House of Refuge for Juvenile Delinquents	Baltimore, Md.	1855	Municipal
House of Ref. & Institution for Colored Children	Bowie, Md.	1873	Corporate
Maryland Industrial School for Girls	Orange Grove, Md.	1866	Directors
City of Boston Almshouse School	Boston, Mass.	1856	Municipal
House of Reformation for Juvenile Offenders	" "	1827	Municipal
State Industrial School for Girls	Lancaster, Mass.	1856	State
Lawrence Industrial School	Lawrence, Mass.	1874	Municipal
House of Employment and Reformation	Lowell, Mass.	1851	Municipal
State Primary School	Monson, Mass.	1866	State
Plummer Farm School	Salem, Mass.	1870	Private
State Reform School	Westborough, Mass.	1848	State
Worcester Truant Reform School	Worcester, Mass.	1863	Municipal
Detroit House of Correction	Detroit, Mich.	1861	Municipal
Michigan State Reform School	Lansing, Mich.	1856	State
Minnesota State Reform School	St. Paul, Minn.	1868	State
House of Refuge	St. Louis, Mo.	1854	—

Reform Schools in the United States (continued).

NAME.	Location	When founded	Control
New Hampshire State Reform School	Manchester, N. H.	1855	State
New Jersey State Reform School	Jamesburg, N. J.	1867	State
State Industrial School (girls)	Trenton, N. J.	1871	—
Truant Home	Brooklyn, N. Y.	1857	Municipal
House of the Good Shepherd	E. New York, N. Y.	1868	Municipal
Industrial School	New York, N. Y.	1868	Municipal
House of the Holy Family Association etc.	" " "	1870	—
House of Mercy	" " "	1854	Trustees
Home for Women	" " "	1867	—
House of the Good Shepherd	" " "	1857	—
Home for Fallen and Friendless Girls	" " "	1866	Managers
House of Refuge	Randall's Island, N. Y.	1825	Corporate
The Isaac T. Hopper Home	New York, N. Y.	1845	Private
The Midnight Mission	" " "	1867	Trustees
Western House of Refuge	Rochester, N. Y.	1846	State
New York Catholic Protectory	Westchester, N. Y.	1863	Municipal
House of Refuge	Cincinnati, O.	1850	Municipal
Protectory for Boys	" "	1868	Catholic
Home of Refuge and Correction	Cleveland, O.	1870	Municipal
The Retreat	" "	1869	—
State Reform School	Lancaster, O.	1857	State
Ohio Girls' Industrial School	Lewis Centre, O.	1869	State
House of Refuge	Toledo, O.	1875	Municipal
Pennsylvania Reform School	Allegheny, Pa.	1854	—
House of Refuge (white)	Philadelphia, Pa.	1826	Managers
House of Refuge (colored)	" "	1850	State
Western House of Refuge	Pittsburg, Pa.	1854	Managers
Sheltering Arms	Wilkinsburg, Pa.	1873	Private
Providence Reform School	Providence, R. I.	1850	Municipal
Vermont Reform School	Waterbury, Vt.	1865	State
Industrial School for Boys	Waukesha, Wis.	1860	State
Girls' Reform School	Washington, D. C.	1873	Trustees
Reform School of the District of Columbia	" "	1869	Territorial

REFORMED CHURCHES.— After the rise of the Reformation, in the 16th century, it was for a time common to divide the Protestants of Europe into two large bodies, the Lutheran Church (q. v.) and the Reformed Church. The latter included all the ecclesiastical organizations which regarded Zwingli and Calvin as their earliest and foremost leaders. In the British Isles, these churches assumed the name Presbyterians (q. v.); and the name Reformed Churches was henceforth only applied to the churches of this type on the continent of Europe. When the Evangelical Church was formed, by the union of the two sister churches in Prussia, in 1817, and afterward in other parts of Germany, the Reformed Church entered heartily into the union, ceasing to exist in name, but not in spirit or life. In Switzerland, the Netherlands, Austria, Hungary, France, and Russia, the Reformed Church continues to exist under its old name. In the United States, offshoots of the German Reformed and Dutch Reformed churches occupy a prominent place among the churches of the country. This subject will be distributed under the following heads: (I) The Reformed Churches of Europe; (II) The Reformed Churches in the New World.

I. *The Reformed Churches of Europe.*— (1) The Reformed Church of *Germany* properly commenced its history in the Palatinate, in the year 1563, when the Elector Frederick published, for the use of his schools and churches, the Heidelberg Catechism, which had been prepared by two professors of the university of Heidelberg— Olevianus, a disciple of Calvin, and Ursinus, a disciple of Melanchthon. The tenets of the Reformed Church were also accepted in Bremen, Nassau, Anhalt, Lippe, Hesse Cassel, and by the Elector of Brandenburg; but were never entertained by more than a small minority of the German Protestants. They are closely allied to what has been called, in history, Melanchthonian Lutheranism. The university of Heidelberg was the most famous school connected with the German Reformed Church. (2) In *Holland*, the Reformed Church became early the prevailing religion, and greatly distinguished itself by its interest in both popular and university education. The eager choice of a university, in preference to a perpetual annual fair, by the people of Leyden, in 1574, is a well-known incident. A free university was also established at Franeker, in 1585. The universities of Groningen and Utrecht were founded, respectively, in 1614 and 1636. In these famous schools, most of the ante-Revolutionary ministers of the Dutch Church in America, who were of Hollandish birth, had been trained, being about 70 in number. The cause of education in Holland was identified with that of Protestantism. At the Synod of Dort (1618—19), decrees were passed in behalf of education, and parochial schools were established throughout Holland. Intelligence so rapidly increased in this little state that she was called *compendium orbis.* Motley says that the New England pilgrims had previously found the system of free schools already established in Holland. The Reformed Church, as the church of the majority of the people and of the government, has exerted, and still exerts, a considerable influence upon the entire educational system of the country, although the school law sanctions the principle of unsectarian instruction. A theological faculty is connected with each of the universities of Leyden, Utrecht, and Groningen, which, in 1874, had an aggregate of 10 professors and about 300 students. The Church, in 1875, had 1,340 congregations, 1,660 clergymen, and, in 1869, a population of 1,956,593 souls. The Christian Reformed Church, which separated from the state church, on the ground that the latter was subject to Rationalistic influences, in 1875, had 340 congregations and 240 ministers; and, in 1869, a population of 107,123 souls. This Church has a theological seminary at Kampen. (See NETHERLANDS.) (3) In *Switzerland*, the Reformed Church is still, as in the Netherlands, the church of the majority of the people (about 1,500,000, or 58 per cent of the population), and is the state or national church in all the Protestant cantons. As such, it is directly or indirectly connected with educational institutions of all grades. (See SWITZERLAND.) Theological faculties are connected with the universities of Zürich, Bern, Basel, and Geneva. As the church is without self-government, but is entirely ruled by the state authorities, Free Churches have been organized in a number of cantons, which have established theological schools at Geneva, Lausanne, and Neufchatel. (4) In *Austria proper*, *Hungary*, *France*, and *Russia*, the Reformed Church constitutes only a small minority of the population, but has been reorganized and supported by the state governments. In Austria proper, the Reformed population amounts to 112,000 (0.51 per cent); in Hungary, to 2,143,000 (13 per cent); in France, to 467,000 (1.29 per cent); and, in Russia, to about 260,000 (0.3 per cent). The school laws of these countries provide for some kind of co-operation by the clergy of the recognized religions in all schools supported by the state; and the theological schools are, to a much greater extent than in Switzerland, under the control of church boards. The church of Austria has, in common with the Lutheran Church, an evangelical theological faculty at Vienna; Hungary has Reformed colleges at Pesth, Sáros-Patak, Kecskemét, Debreczin, and Nagy-Enyed; France has a Reformed faculty of theology at Montauban.

II. *Reformed Churches in the New World.*—There are two branches of the Reformed Church in the United States. After the nationality of the colonies in which they originated, they were formerly called the Dutch Reformed Church and the German Reformed Church; but, of late, both have changed their official names, and the former now calls itself the Reformed Church in America; the latter, the Reformed Church in the United States. The former, in 1876, consisted of 506 churches, 546 ministers, and about 75,000 communicants, and represented a population of about a quarter of a million. The latter had 650 ministers, 1,350 congregations, and a membership of 150,000, representing a population of about 250,000 souls. In the former, the Dutch language has, in all the old congregations, given way to the English; in the latter, the same is the case, in a majority of the congregations, in respect to the German; though, owing to the extensive immigration of Germans, the number of German-speaking congregations is still on the increase, and 2 of the 6 synods into which the church is divided, 4 of the 16 periodicals, and 2 of the literary institutions, are exclusively German.

(1) *The Reformed Church in America*, formerly known as the *Reformed Dutch Church*, is the oldest body of the Presbyterian form of government and doctrine in the United States. This denomination consisted originally of the Dutch and Walloon colonies, planted by the West India Company on the Hudson and Delaware rivers, and on Long Island. The West India Company repeatedly promised to provide and support ministers and school-masters in New Netherlands, though these promises were often forgotten. The people, at such times, though poor, taxed themselves. School-masters were obliged to undergo an examination before the *classes*; and the office could not be assumed voluntarily. The yet unpublished voluminous correspondence between the Dutch churches in America and the parent church in Holland, has frequent references to the subject of schools. While parochial schools in connection with the Dutch Church have not become general in America, nevertheless the church of New York has maintained such a school from 1633 to the present time. (See DUNSHEE, *History of the School of the Dutch Reformed Church of New York*.) A Latin or high school was also founded as early as 1659.—The English governors were naturally opposed to the Dutch schools, and sought to anglicize the whole population. It became increasingly difficult, to secure ministers from Holland. This fact forced the subject of American institutions and the need of an American trained ministry upon the attention of the people. Those who had been trained in the universities of Europe, thought that no adequate education could be provided in America; but the churches must nevertheless be supplied with ministers. The debate grew very warm, and divided the church into parties for 17 years. In the mean time, about a dozen American youths were sent to Holland for education; and about as many were trained by pastors in this country before 1771, when the denomination became ecclesiastically independent of Holland. An effort was made (1755) to found a theological chair for the Dutch in King's (Columbia) College, by an amendment to the charter of that institution; but the plan was not acceptable to the people. A charter was secured, in 1766, for a distinctively Dutch institution in New Jersey, but this was thought to be un-American. A charter upon the most liberal principles, and capable of indefinite expansion, was finally secured (in 1771) for Queen's (Rutgers) College, situated at New Brunswick. Union College, at Schenectady, was also organized, largely under Dutch patronage,

as may be seen from the fact that it has given more than 100 ministers to the Reformed (Dutch) Church. Hope College was organized in 1863, in Holland, Michigan, to meet the necessities of the more recent emigrants from Holland. There is a theological department in connection with the college. — Efforts were made immediately after ecclesiastical independence (1771), to found a theological seminary. The Revolution delayed the work; but, in 1784, the Rev. John H. Livingston, a graduate of the University of Utrecht, and the last of the American youths who had gone to Holland for education, was appointed professor of theology; and Dr. H. Meyer was appointed, at the same time, professor of the sacred languages. In 1810, this seminary was located permanently at New Brunswick, and was united with Rutgers College until 1864. It has sent forth (1784—1876) 657 ministers. If to these be added 27 American youths, educated here or elsewhere before 1784, and about 50 in Hope College, we have a total of 734 persons educated directly by this church for her own ministry, besides those educated for other professions. The Theological Seminary now has property at New Brunswick, N. J., amounting to almost $350,000, and four well-endowed professorships. Hertzog Hall is a spacious residence for students; Suydam Hall contains lecture rooms and a fully equipped gymnasium; and Sage Hall contains a library of about 27,000 volumes, and is receiving constant additions. A board of education (organized in 1828) affords aid to needy students. Its own and other educational funds under the control of the denomination, amount to $160,000, with direct yearly contributions, from the churches, of from $10,000 to $15,000 more.

(2) The *Reformed Church in the United States*, originally called the German Reformed Church, was founded by emigrants from Switzerland, Holland, and the Palatinate, in Germany, in the early part of the last century. As the fathers of the Reformed Church were accustomed to parochial schools in Germany, when they emigrated to this country, they sought, at an early day, to establish such schools in connection with their congregations. The school and the church belonged together; and the teacher, accustomed to play the organ and to conduct the singing in the sanctuary, was next in rank to the minister in public estimation. The schools, of course, were all religious and Christian, and in them the New Testament, the psalter, and the Heidelberg catechism were used as text-books. This was generally the case in both branches of the German Church, Reformed and Lutheran; but, as the country was new and many of the people poor and scattered, they were often unable to secure even the services of the ministers of the gospel, much less school-masters to instruct their children. There was, therefore, a sad decline, for a time, both in religious and educational interests. But in 1746, Rev. Michael Schlatter came to Pennsylvania as a missionary under the direction of the Reformed Church of Holland, and proceeded not only to organize churches, but also to establish schools. He was shocked at the ignorance prevailing among the young people, and did much to improve their condition. He collected money in Germany, Holland, and England for the establishment of schools and the support of teachers, in which good work he was assisted by the authorities of the province and many patriotic citizens. In many places he succeded in building up schools which continued to flourish for a long time, and hence may be regarded as the first superintendent of public instruction in the state. In 1787, the legislature of Pennsylvania granted a charter for the establishment of Franklin College, at Lancaster, Pa., and, in addition, made a grant of 10,000 acres for this object from the public domain; which grant, although at first more expensive than profitable, became in the course of time valuable. The project originated with a number of reputable citizens of German extraction; and, as it was intended more particularly for the benefit of the German population, "through whose industry and patriotic services the state had arisen to such a high degree of prosperity," it was in effect placed under the control of the Lutheran and Reformed people. It excited considerable interest at the time and enlisted the warmest sympathies of such patriots as Rush and Franklin, of Philadelphia. It received its name from the latter, who was president of the state. Intended from the first to be an institution of a high order, something like a German university, it nevertheless continued to be, for many years, only a respectable high school, and did not attain to the dignity of a college until the year 1853.— The German population looked with suspicion on the free-school system when it was first broached in Pennsylvania, because it did not make adequate provision for the religious education of youth, seeming to eliminate the religious element altogether. They were, from the beginning, supporters of parochial schools, and were then, as they are still, wedded to the idea that education and religion ought to go together. They yielded at last in their opposition, because common schools seemed to be the best that could be had under the circumstances. Their German governors, Wolf and Ritner, the one of Lutheran and the other of Reformed persuasion, under whose administration, and by whose support, the present free-school system was introduced into the state, had much to do in reconciling them to the new order of things. With the consolidation of this system, the old parochial schools, in a great measure, passed away. As far as the Reformed Church is concerned, however, it may be said, that while it supports public schools as a necessity and a great public benefit, it would generally prefer a system of parochial schools, if they could be maintained in a flourishing condition. It may also be said, judging from some of the recent ecclesiastical utterances, that it is probable the church will yet revive these schools in some degree, not in opposition to the public schools, but to serve as their proper supplement, and as a vindication of the theory of Christian education.

In the year 1825, the Synod of the German Reformed Church, in order to increase and improve the character of its ministry, established a theological seminary at Carlisle, Pa., under the charge of Dr. Lewis Mayer, in close connection with Dickinson College; but, as the seminary was removed to York, Pa., in 1829, it soon became evident, that, in order to give it the necessary efficiency, a classical school was needed. Such a school was, therefore, established in connection with the seminary; and, under the care of Dr. Frederick Augustus Rauch, a ripe scholar from the father-land, who took charge of it in 1832, and Prof. Samuel W. Budd, a graduate of Princeton College, it flourished, and accomplished, for the time being, the work of a college for the Church. In the fall of 1835, it was removed to Mercersburg, Pa., where, having received a charter from the legislature, it was converted into a regular college, under the name and title of Marshall College. Dr. Rauch was its first president; and to him it owes its German-American character, that of an American institution pervaded with the spirit of German science and literature. In the year 1841, at the early age of thirty-five, he died, in the midst of his rising fame, deeply lamented by all who knew him. Dr. Rauch's place in the college was ably filled by the Rev. John Williamson Nevin, from the year 1841 to 1853, who during the same time served as the regular professor of theology in the seminary, which had been removed to Mercersburg soon after the removal of the high school. Dr. Nevin labored to promote the interests of the college with much energy and self-sacrifice, and gave it a national reputation; but, whilst it flourished internally, and performed important service in the cause of education, letters, and sound learning, it suffered from the want of an adequate endowment, which at times made even its permanence as an institution problematical. Accordingly, when the trustees of old Franklin College, at Lancaster, which had an endowment of over $50,000, but was without college classes or college arrangements, proposed to unite the two institutions, the proposition was favorably received; and they were consolidated by an act of the legislature, under the name of Franklin and Marshall College. This arrangement went into operation in 1853, since which time the college has pursued a successful career in the midst of a large German-American population, upon whom it has acted as an educational stimulant with greater influence, perhaps, than any purely American institution could have exerted. The German language is a regular branch of study, as much so as Latin and Greek. In its philosophical course, the college seeks, in accordance with the idea of its first president, Dr. Rauch, to unite the practical spirit of this country and England with the speculative and idealistic tendencies of the father-land. At the same time, much stress is laid on the religious training of the students. To accomplish this object, the students and the families of the professors, in the seminary and college, are organized into a regular congregation under the direction of *classes*. The students serve as deacons and elders; and the professors—such as are clergymen, as pastors. Collections are taken up for benevolent purposes every Sabbath, and students are prepared for confirmation yearly by a course of catechetical lectures. The college has, thus far, performed a very important service for the cause of education among a large and intelligent class of people. Previous to its organization, in 1835, comparatively few young men of German extraction went to college at all; and but few of the German-Americans, even in the ministry, had enjoyed the benefit of a classical training. Now college graduates from this source, filling important positions in society, are counted by scores or hundreds. Many of them, in turn, have been active in founding other colleges and classical schools in different parts of the country. The Reformed Synod of Ohio has a flourishing literary (*Heidelberg College*, q.v.) and theological institution at Tiffin, Ohio. Mercersburg College, which grew out of a high school that was established after the removal of Marshall College to Lancaster, is a young and vigorous institution. It is the child of the Mercersburg Classis. Catawba College, at Newton, N. C., under the jurisdiction of the North Carolina Classis, although it suffered much in the loss of its endowment during the war, has been revived, and shows signs of returning prosperity. Palatinate College, at Myerstown, Pa., carries its students as far as the junior class. It is located in a populous German section of the state, and is performing a good work. It is also a church institution, and is owned by the Lebanon Classis. Ursinus College (q. v.), at Collegeville, Montgomery Co., Pa., was opened a few years ago, by the Rev. J. H. A. Bomberger, and others who sympathized with him in his theological tendencies. It has manifested considerable energy, but is not under any direct ecclesiastical control. Clarion Collegiate Institute, at Rimersburg, Pa., and Blairstown Academy, Blairstown, Iowa, are classical high schools, established by the *classes* within whose bounds they are located. The foreign German population of the Church have two institutions under their care: Calvin Institute, at Cleveland, Ohio; and the Mission House, at Howard's Grove, Wis. The one is a classical school; and the other, a theological seminary.—While the growth of institutions for the education of young men has been encouraged, female education has not been overlooked in the Reformed Church. The East Pennsylvania Classis has established the Allentown Female Seminary, at Allentown, Pa., under the presidency of Rev. W. R. Hofford, A. M. In the Maryland Classis, Rev. Geo. L. Staley has a seminary of a high order, for females, at Knoxville, Md.; Rev. J. Hassler, A. M., has another at Mercersburg, Pa.; and Rev. Lucian Cort, A. M., has also the management of one at Greensburg, Pa. These institutions are, at present, in a thriving condition and give promise of being well patronized by the people of the Reformed Church.

REGENTS OF THE UNIVERSITY. See New York.

RELIGIOUS EDUCATION is that which has for its special object the cultivation of that faculty of the human soul by means of which it is enabled to realize the existence and constant presence of the Deity, to know Him, and to commune with Him in worship and prayer. Some have designated this the *religious sentiment*; but strong exception has been taken to that term, as belittling the basis of religion in the human soul. An experience of human nature, in its various degrees of culture, shows that there are what may be called religious intuitions, common to all minds of whatever grade of development; but that while these may prompt to worship, yet, without religious instruction, they can lead only to superstitious and debasing practices. The religious or spiritual instinct does not necessarily involve any act of the intellect; for those whose intellectual education and endowments are quite inferior, often show a surprising degree of spiritual insight and religious fervor. This fact, however, does not supersede the necessity of appealing to the understanding in imparting a knowledge of those religious truths which have been communicated by divine revelation; but, in receiving these truths, the intellect assumes the attitude of faith rather than of inquiry; that is to say, having become satisfied of the authenticity, or the authority, of the source whence these truths, or dogmatic teachings emanate, it does not exercise its powers to establish their validity, but only to conceive them in their true import and relations. Hence, the intellect is not to be cultivated by means of religious instruction; although its exercise cannot wholly be dispensed with. The specific office of religious education is thus twofold: (1) to cultivate the religious instincts; and (2) to impart religious truth. The one is accomplished by means of devotional exercises; the other, by dogmatic teachings.—In the first stages of religious education, appropriate exercises constitute almost the only agency needed, nothing but the simplest religious truths being requisite (such as are usually contained in the catechism); but, in the more advanced period of culture, the importance of dogmatic instruction increases. Simple prayers and hymns, with just enough teaching to enable the child to realize their full significance, are the usual and the most effective means of exercising the religious faculty. It must, however, be borne in mind, that the mere saying of a prayer, or the singing of a hymn, will not necessarily give this exercise, any more than merely committing to memory a definition or a rule will exercise the intellect. The mechanical repetition of prayers, in religious education, is just as useless as rote-teaching in intellectual education. By an inattention to this principle on the part of parents and religious teachers, no doubt, many children become disgusted with religious devotion, while others imbibe the notion that religion is only a matter of forms and ceremonies, or the repeating of the catechism. In either case, the religious instinct becomes dormant for the want of due exercise.

The relation of moral and religious education should be carefully studied. In brief, it may be said that the former deals with the relations which mankind sustain to each other; and the latter, with those which man as a spiritual being sustains to the Infinite Spirit, the Creator and Preserver of all things. In the one, the principle addressed is that of conscience (q. v.), the sense of right; in the other, it is the religious principle, the spiritual instinct, by which man is brought into communion with his Maker. (See Moral Education.) In a certain sense, these two departments of education are independent; for conscience operates independently of religion; but a religious sanction is the strongest foundation for moral precepts. For this, the Christian revelation affords the fullest authority, the "first and great commandment" being to love God; and the second, "to love thy neighbor as thyself." The several departments of education are not to be divorced from one another, but all are to be carried on together, so as to produce a harmonious development of character. (See Harmony of Development.)—In imparting religious instruction, the same principles are to be applied as in intellectual education, as far as language is the vehicle of the instruction. Very much of the religious teaching given in the Sunday-school is of no value, because of the neglect to observe these principles. Committing to memory formulated dogmas, verses from the Bible, doctrinal lessons, etc., without any proper appreciation of their significance, can be of little service; and in some cases may do positive harm. Oral instruction plays a most important part in this kind of teaching; and Bible expositions, when clear, definite, and illustrative, always prove the most effective as well as the most attractive means of instruction. —The questions as to the relation of religious and secular instruction are considered in the article on Denominational Schools.—(See also Bible, and Sunday-Schools.)

REUCHLIN, John, one of the foremost representatives and promoters of classical studies in the 15th and 16th centuries, was born at Pforzheim, in 1455, and died at Stuttgart, June 30., 1522. His lectures on Greek authors, delivered at the university of Basel, are regarded as the first of the kind. He disagreed with Erasmus in regard to the true pronounciation of Greek, and those who adopted his views, were called Reuchlinists. (See Greek Language.) The Hebrew grammar, published by him in 1506, under the title *Rudimenta Hebraicæ Linguæ*, was largely instrumental in introducing the study of this language into the sphere of ordinary studies. In consequence of his appreciation of Jewish learning, he was violently attacked by the Dominicans. The emperor, having been petitioned to order all the books of the Jews destroyed except the Old Testament, Reuchlin was directed by the Elector of Mayence to declare what should be done in the matter. He decided that only those books that directly attacked Christianity should be destroyed. He was now subjected to active persecutions. His enemies declared him to be a heretic, and accused him of being secretly inclined to Judaism. He was tried by Hoogstraaten, at Mayence, and his writings were condemned to the flames. He appealed to the Pope; and the case was referred to the Bishop of Spire, who decided in Reuchlin's favor. An appeal from this decision was taken to Rome, but was never directly acted upon. A league of Reuchlinists (so called) was formed to take the part of Reuchlin. It assumed the championship of the cause of classical learning, as opposed to the scholasticism which had prevailed, and enlisted the co-operation of many of the most distinguished men of Germany. In 1519, Franz von Sickingen ordered the Dominicans to make good to Reuchlin all the costs of court which he had incurred in consequence of their proceedings against him, and to give security against his further prosecution; and they did so. In 1520, Reuchlin read lectures at Ingolstadt, under the patronage of the Duke of Bavaria, on Hebrew grammar and the *Plutus* of Aristophanes, to more than three hundred hearers. A few months before his death, he was invited to teach Hebrew and the Greek grammar in the university of Tübingen.

REWARDS, as an instrument of family or school discipline, are benefits or privileges conferred to incite children to well-doing. Primarily, the offer of a reward, as an incitement to effort on the part of the pupil, appeals to *hope*, as punishment does to *fear* (q. v.); but there are other elements of individual character also addressed, depending on (1) the nature of the reward offered, and (2) the individuality of the pupil. Thus, the pupil who is particularly fond of praise, if offered a valuable gift as an inducement to do right, would strive to obtain it as a striking token of his teacher's approval; while one who was naturally acquisitive, or eager for gain, would regard only the intrinsic value of the reward. Hence, in one case, the pupil's approbativeness would be stimulated; and, in the other, his acquisitiveness; but in neither would the sense of duty be cultivated. The necessity of exercising great care in offering rewards will, therefore, be obvious. While an appeal to hope as an incentive to do right, is in most cases, if not always, preferable to an appeal to fear; yet, it must be borne in mind that rewards as well as punishments constitute only a temporary expedient in the discipline of children, and should, as soon as possible, give place to a direct appeal to conscience, or the sense of right. (See CONSCIENCE.) When rewards are offered to a number of pupils, to be conferred upon those who excel all the others, they become *prizes*, and are liable to all the objections which have been urged against the prize system; but when rewards (*premiums*), whether gifts of money, books, pictures, or other articles of value, or merely tickets or certificates of merit, are offered to all who reach a certain specified standard of merit, either in study or behavior, these objections are obviated; as, although the mercenary spirit may still be addressed, there is not the same liability to injustice, or the same cause of envy and jealousy. Rewards may, however, consist merely of special privileges conferred upon meritorious pupils; such as dismissal before the usual time for closing school, permission to occupy some post of honor or authority in connection with the management of the school or class, or to engage in some special sport or recreation planned by the teacher, as a means of encouraging well-doing. All these, doubtless, have their place in a proper scheme of school discipline; and, when used with discrimination, are beneficial.—A system of rewards has been objected to as appealing to the lower, rather than to the higher, motives; but an educator must not be led astray by any transcendental view of human nature. He must recognize the moral imperfections of his pupil, and strive to lift him gradually to a higher plane of thought and action. In this connection, it has been properly remarked, "whatever may be possible in the mature man, in the line of that sublime abstraction, *virtue is its own reward*, the child is neither equal to such abstractions, nor are they demanded of him. They may, it is true, be gradually wrought by instruction into the body of his thought, for the sake of their ultimate effect on his principles as a man; but, embraced, as he is, in a world of perceived realities, and only capable of attaining the subtler ideals by passing to them through the fine gradations of a progressively reduced and sublimated reality, it is absurd and tyrannous to rob him of the stimulus, guidance, and aid of proper rewards as outward realities foreshadowing the ideal of absolute virtue, and rendering possible both its conception and attainment." — See JEWELL, *School Government* (New York, 1866); MORRISON, *Manual of School Management*, s. v. *Discipline* (5th ed., Glasgow, 1874).

RHETORIC (Gr. *ῥητορική*, art of oratory) was originally applied to that branch of study in which students were trained for public speaking. In Greece and Rome, the orator was directly the most powerful exponent of truth and opinion. As a teacher, as well as a persuader, his influence was, to a great extent, confined to his hearers; and eloquence was, therefore, in the greatest request. But, even in the writings of the three greatest of the ancient rhetoricians,—Aristotle, Cicero, Quintilian, there is evidence that rhetoric embraced compositions not intended for delivery in public. In modern times, rhetoric as an art treats of all composition, whether spoken or written. It has been well defined as the *art of discourse*, and discourse itself as "the capacity in man of communicating his mental states to other minds by means of language." It embraces poetry as well as prose "because," as Campbell says, "the same medium, language, is made use of; the same general rules of composition, in narration, description, and argumentation, are observed; and the same tropes and figures, either for beautifying or invigorating the diction, are employed by both. The versification is to be considered as an appendage rather than a constituent of poetry." In the most recent treatises on rhetoric, elocution, or the art of delivery, has been omitted. Day very justly says, "that this mode of communication is not essential. The thought may be conveyed by the pen or by the voice. Elocution, or the vocal expression of thought, is not, accordingly, a necessary part of rhetoric." In Whately's treatise (*Elements of Rhetoric*), however, a work considerably used by students, a large part is devoted to elocution.—It has often been observed that there must have been orators before there were rules in oratory; and this is often used as an argument for undervaluing the study of rhetoric, just as kindred arguments are advanced against the study of logic and grammar. But there can be no question that immense progress has been made through the critical study of writers of standard reputation, by comparing, discriminating, and deciding on, their faults and graces, thus teaching us what to avoid, and what to emulate. In its best sense, rhetoric presupposes an acquaintance with logic—the science and art of reasoning; because conviction and persuasion are two of the great objects present in the minds of speakers and writers. It also requires an acquaintance with grammar, as teaching the proper arrangement of words and sentences. Rhetoric may be regarded from two points of view: (1) as a purely critical study; and (2) as the constant practice of an art. To the extent that either of these views becomes more prominent in the teacher's mind, will the character of his instruction be affected. It is quite possible to prepare students to recite well in the statement of principles and definitions; and yet the same students may be very deficient in the development or expression of spoken or written thought. The condition of such students may lead us to say with Butler:

> "For all a rhetorician's rules
> Teach nothing but to name his tools."

In the celebrated treatise of Blair, *Lectures on Rhetoric and Belles-Lettres*, *taste* and *style* are so treated as to occupy a very large part of the subject. It is largely so with Campbell's *Philosophy of Rhetoric*. Whately drew particular attention to the subject of *invention*; but he follows *style* with a chapter on *elocution*. The practice, at present, which seems to be increasing in favor with teachers, is to omit elocution, or the training in mere delivery, and to extend the importance of invention even beyond that assigned to it by Whately. The two great divisions of rhetoric are thus invention and style. There can be no question as to the importance of *invention* in rhetoric. The arrangement of the thoughts according to their logical dependence must be the foundation of the art of discourse. Good thinking must always precede good writing. The office of invention is to train the pupil to habits of correct thinking. It does more than this; it seeks to supply the thought. Thus, invention is naturally divided into two parts,—the supplying of the thought, and its proper arrangement; and of these two divisions, the second is dependent on the first. In a cyclopædia, where the space is necessarily limited, it will not be expected that any systematic development of the steps and processes used in invention can be given. The reader is referred, on this and on other points, to the works enumerated at the end of this article. While, however, there is no dispute as to the place of invention in rhetoric as an art, it may reasonably be doubted, whether it can be properly studied at the early age when pupils are usually required to study rhetoric. In many of its steps, it is essentially logical, and presupposes an acquaintance with that subject,—and this again demands some considerable maturity of mind. The preparation of arguments, or the art of influencing the will by discourse, is a power the development of which goes on past middle age; but it is a power that cannot be successfully trained in very early years. The chief danger in teaching this particular division of rhetoric, is that it may be made too scientific. There are few young minds so trained, or of such native vigor, as to be capable of dwelling long, and with benefit, upon even well enunciated truths and definitions; but, even where it is insisted on and continued, the results are not always beneficial.

The second grand division of rhetoric—*style* deals more particularly with the form of the thought. Perhaps no word has given more difficulty to define. Without speech, "thought is not possible in reality." Though so endlessly variable in its form, so subtle as almost to defy minute analysis, so subject to the moods of thought, and yet so plastic as to conform to its most sinuous and involved movements, we soon realize by a little study, how completely it is a part of the thinking. The thought and the style are thus seen to be one living body. As a subject of study, it is that part of rhetoric which has always created and maintained the greatest interest in the minds of young students. Treating of the form of the sentence, and also of its component words, it depends, to some extent, on grammar, and may be said to follow it, in a natural order of study. It is, therefore, to young minds more suitable than the other division—invention. The practice which it requires in the substitution of words, the inversion of sentences from grammatical to rhetorical forms, the use of rhetorical figures, the expansion and contraction of language, furnishes a constant stimulus to mental exertion. Such exercises in style show the student how powerfully the thought is influenced by the vehicle of thought, how it may be modified by the substitution of a clearer word, or remarkably affected by a different position of the same words.

The advantage of *sentential analysis* in the careful study of style can scarcely be overrated. The arrangement of words, phrases, and clauses, peculiar to the great English writers, affect most powerfully the turn of the thought, and are open to investigation through this analysis. The kind of sentences they use, and the variety in which they indulge, give that harmony of movement so indescribably pleasing. We, thus, see from what arise the clearness and greatness of Hume, the energy and brilliancy of Macaulay, the grace of Irving, the manly vigor of Sydney Smith, the philosophic calmness of Helps, the incomparable plasticity and fire of Byron's prose. Perhaps no part of rhetoric offers a finer field for both teacher and student than the application of sentential analysis to an investigation of the striking peculiarities in the style of great writers. —In no branch of study, is there greater necessity for abundance of practice on the part of the student. In none is there greater necessity that the student, and not the teacher, should do the chief part of the work. The value of rhetoric, as a branch of study, is to be tested by its practical utility, by what it contributes towards developing clearness, force, and beauty of expression in language. Any thing else, however scientific, in this branch must prove to the young student a comparatively barren and irksome task. In this light, the constant application of a few simple principles to the criticism of great writers is an admirable part of the training. In Blair's *Lectures on Rhetoric*, there is a series of papers from Addison illustrating this view; and it is to be doubted whether modern treatises on rhetoric, aiming at a more philosophic treatment of the subject, while they have gained in scientific arrangement, may not have lost some of this critical training. Accuracy, as well as force of expression, purity, propriety, grace, are, to most students, the result of constant, careful practice, combined with criticisms on distinguished writers. Franklin, in his autobiography, gives a most interesting account of what can be accomplished under limited opportunities, without a teacher, by careful criticism and revision. The various steps, related in his remarkably simple English, are worthy of the notice of those engaged in the instruction of youth.—In the two leading American colleges, Harvard and Yale, the time allotted to the study of rhetoric is, in the former, a part of the sophomore and junior years; in the latter, the senior year, although lectures on rhetoric are delivered to the sophomore class. Supposing the average age of students, at the time of admission, to be 17—and this is, probably, below the true average—it may be said that rhetoric, as a distinct branch of study, is pursued by the students in their twentieth year. This age gives some degree of maturity. By a thorough course in the classical or modern languages, students are, to a certain extent, prepared to enter upon the study of invention and the criticism of style.—See KAMES, *Elements of Criticism;* ADDISON, *Essays on Paradise Lost*, in the *Spectator;* BLAIR, *Lectures on Rhetoric and Belles-Lettres;* CAMPBELL, *Philosophy of Rhetoric;* WHATELY, *Elements of Rhetoric;* DE QUINCEY, *Rhetorical and Critical Essays*, art. *Style;* HERBERT SPENCER, *Essays, Moral, Political, and Æsthetic*, art. *Style;* H. N. DAY, *The Art of Discourse* (N. Y., 1869). (See also **BELLES-LETTRES.**)

RHODE ISLAND, one of the original states of the American Union, and the smallest of all now composing it, having an area of 1,306 sq. m., and a population, according to the census of 1870, of 217,358.

Educational History.—It is claimed by Rhode-Islanders that the first school established by public vote in New England, was at Newport, R. I., in 1640. The early town records are very defective; but it appears, from Callender's *Historical Discourse* (1738), that, in 1640, Mr. Robert Leuthal was, by vote, "called to keep a public school for the learning of youth," and, further, that an appropriation of one hundred acres of land was made for the permanent support of a school, "for encouragement of the poorer sort, to train up their youth in learning." This school tract of 100 acres was allotted in what is now the town of Middletown; but, in 1661, was exchanged for a tract afterwards known as Newtown, or School-land. In 1663, this tract was ordered to be divided into lots; and the income arising from the sale or lease of them was to constitute a fund for the "schooling and educating of poor children."—The first public act in behalf of education in Providence was in May, 1663, when the proprietors voted that 100 acres of upland and 6 acres of meadow should be laid out as school lands, and "reserved for the maintenance of a school in this town." The earliest allusion to a school-house is made in 1752; and it is probable that the town simply allowed the school-master the use of the building, at a fixed rent, the pupils paying him for his services. At a town meeting held Dec. 2., 1767, the citizens voted to build "three school-houses for small children and one for youth, to provide instructions, and pay the expense from the treasury, and these schools to be under the supervision of the school committee." A plan for the organization of the schools was reported by the committee, through Governor Jabez Bowen, and may be found in the pages of Staples's *Annals of Providence.* It is an admirable report, and is based upon this wide provision: "That every inhabitant of this town, whether they be free of the town or not, shall have and enjoy an equal right and privilege of sending their own children, and the children of others that may be under their care, for instruction and bringing up, to any or all of said schools." This beneficent plan was, however, defeated, on grounds thus stated by Moses Brown, another member of the committee:

> "1768. Laid before the town by the committee, but a number of the inhabitants (and what is most surprising and remarkable the plan of a Free School, supported by a tax, was rejected by the POORER sort of the people,) being strangely led away not to see their own as well as the public interest therein, (by a few objectors at first,) either because they were not the projectors, or had not public spirit to execute so laudable a design, and which was first voted by the town with great freedom. M. B."

The town, at last, built a school-house, conjointly with private proprietors, the town owning only the lower story, but having the supervision of both private and public schools, through a school committee.

In Bristol, the original proprietors, in 1680, granted land "for the common improvement, for the encouragement and use of an able orthodox minister, and for the use and encouragement of an able schoolmaster in the town." The first recorded act of the citizens of Bristol in regard to schools is dated in September, 1682, when it was voted:

"That each person that hath children in town ready to go to school, shall pay three pence the week for each child's schooling to the schoolmaster, and the town by rate according to each ratable estate shall make the wages to amount to £24 the year. The selectment to look out a grammar schoolmaster and use their endeavor to obtain £5 of the cape money granted for such an end." "September, 1684, voted £24 the year for Mr. Cobbitt, he officiating in the place of a schoolmaster in this town."

These seem to have been the main attempts at popular education in this state, before the Revolution. There were, also, some local efforts for the instruction of the Indians, beginning with a gift of land made by Judge Sewall, of Massachusetts, for that purpose. In regard to the colored population, then quite numerous in Rhode Island, the Newport *Mercury*, of March 29., 1773, had the following:

"Whereas a school was established, several years past, in the town of Newport, by a society of benevolent clergymen of the church of England, in London, with a handsome fund for a mistress to instruct thirty negro children in reading, sewing, etc. And whereas it has hitherto been found difficult to supply the said school with the number of children required; notice is hereby given, that the said school is now kept by Mrs. Mary Brett, in High Street, nearly opposite to Judge Johnston's, and is open to all societies in the town, to send their young blacks, to the number of thirty; And, provided, that the number cannot be nearly kept up for the future, the gentlemen to whose care and direction the said school has been entrusted will be obliged to give it up entirely at the expiration of six months."

There were many reasons why popular education met with less general support in Rhode Island than in Massachusetts. The population was far more scanty—not exceeding 7,000, in 1680, and being only 17,935 in 1730. Over much of the territory, there was no settled government, there being boundary disputes in several directions. Rhode Island was a peculiar sufferer by the Indian wars, and the continued existence of slavery was a fatal obstacle to public schools. Finally, there was no such powerful body of clergymen as existed in Massachusetts, sustaining by potent influence the whole system of schools. There was, on the contrary, a strong reaction against this clerical influence, and against the traditional institutions of Massachusetts and Connecticut. It was due to all these reasons that public schools, though planted so early in Rhode Island, flourished less than in these other states. The reminiscences of Samuel Thurber, an aged citizen of Providence, record the general condition of education, before the Revolution:

"As respects schools, previous to about the year 1770, they were but little thought of; there were in my neighborhood three small schools perhaps about a dozen scholars in each. Their books were the Bible, spelling-book, and primer. One was kept by John Foster, Esq., in his office, one by Dr. Benjamin West. Their fees were seven shillings and sixpence per quarter. One was kept by George Taylor, Esq., for the church scholars. He, it was said, received a small compensation from England. Besides these, there were two or three women schools. When one had learned to read, write, and do a sum in the rule of three, he was fit for business. * * * The Rev. James Manning did great things in the way of enlightening and informing the people. Schools revived by means of his advice and assistance. Previous to him it was not uncommon to meet with those who could not write their names."

This testimony links Brown University with the history of common-school education in Rhode Island. Dr. Manning was president of what was then Rhode Island College, when it was removed to Providence, in 1770; and the impetus given by him would, doubtless, have borne more immediate fruit, but for the absorbing excitement of the Revolution. A colony which saw one of its chief towns long held by the enemy, could not give much attention to schools. The conflict left the young state terribly depleted and impoverished. It had hardly recovered itself, when it was urged on to the adoption of a public-school system, through the far-seeing energy of one man. The real founder of public schools in Rhode Island was John Howland, who was born in Newport, in 1753, and was sent to Providence at thirteen, to be a barber's apprentice. He was afterwards a soldier of the Revolution, and was then for many years a barber in Providence. He was also a member of the Mechanics' Association, founded in 1789. Mr. Howland has left fully on record the successive steps in the agitation which resulted in the establishment of public schools; and it is a curious fact that, by his showing, it met with no opposition from the wealthy, but only from the very class it was especially designed to benefit. It was warmly approved in Providence, and was endorsed in Newport, but was regarded with indifference in the country towns. In these, indeed, it had been but little agitated, a fact to which the early repeal of the measure was mainly due. The bill establishing public schools was enacted in the February session, 1800. Its vital provisions were as follows:

"SECTION 1. *Be it enacted by the General Assembly, and the authorities thereof, and it is hereby enacted;*—That each and every town in the State shall annually cause to be established and kept, at the expense of such town, one or more free schools, for the instruction of all the white inhabitants of said town, between the ages of six and twenty years, in reading, writing, and common arithmetic, who may stand in need of such instruction, and apply therefor."

"SEC. 2. *And be it further enacted*, That it shall be the duty of the Town Council of every town, to divide said town into so many school-districts as they shall judge necessary and convenient."

It was further provided that each town might retain, for school purposes, twenty per cent of its state taxes, so long as the sum thus retained did not exceed $6,000. In case any town failed to establish the schools required, this allowance was to be forfeited; but there was no other penalty imposed, nor was action made obligatory. As a result, the law was an absolute failure, except as regarded the city of Providence. No other community carried it into effect, and the law itself was repealed in 1803.

In organizing the schools of Providence, John Howland was made one of the committee; and so thoroughly was his work done in his own city, that the school system was there sustained after the repeal of the general law, and the schools of Providence remained, until within a few years, far in advance of all the rest of the state.—For twenty-five years after the repeal of John Howland's law, there was in Rhode Island no state system of schools, even on paper; though the local schools of Providence were well sustained at the public expense, and there were, at Newport and elsewhere, some endowed schools, most of them established by lottery. In 1827, there were petitions for a school system; and, in 1828, a law was passed, authorizing towns to appoint school committees, and to tax themselves for schools; and providing that sums paid into the general treasury by lottery dealers and auctioneers should be appropriated to the support of public schools, to an amount not exceeding $10,000. This act was the foundation of the present school system of the state; and though its provisions seemed in some respects unsatisfactory, it was yet a great step forward. During the next fifteen years, the system underwent some important modifications, especially as to the plan of distribution of the school money, which was at first allotted to each town in proportion to the number of inhabitants below the age of sixteen; but, afterwards, according to (1) the number of white persons under sixteen, (2) the number of colored persons under ten, (3) five-fourteenths of the colored persons between ten and twenty-four. This complicated method remained in force from 1832 to 1845.—The first document answering to a general school report was prepared by Oliver Angell,a veteran teacher, in behalf of a committee appointed at a public meeting in Providence. It was printed in pamphlet form, and dated May 17., 1832. The most important statistical facts contained in this report were the following:

Whole number of public schools in the state...	323
Whole number of scholars taught in them......	17,034
Number of male teachers employed...........	318
Number of female teachers employed.........	147
Number of schools continued through the year	20
Average time of the others................	3 months.
Whole amount appropriated by the towns for the support of schools....................	$11,490
Amount drawn from school fund..............	$10,000
Whole amount expended for support of public schools	$21,490
Number of private schools continued through the year, under male teachers.............	30
Number of private schools continued through the year, under female teachers............	88
(In nearly all the country towns, the private schools may be considered as the public schools continued by individual subscription, from three to six months.)	
Whole number of scholars taught in them (exclusive of the Friend's Boarding-School, Providence)..............................	3,403
Total estimated expense of private schools,....	**$81,375**
Expended for support of schools for one year.	**$102,865**

Some strange facts may be gathered from these statistics. It appears that, in 1832, Providence had five times as many public schools as private; Newport, sixteen times as many; and the amount expended on private schools throughout the state was four times that spent on public schools. Only twenty public schools were continued through the year, the average time of the others being but three months; and men outnumbered women, as teachers, almost two to one. In 1843, a bill was introduced into the Rhode Island assembly, by Wilkins Updike, of South Kingstown, to authorize the governor of the state "to employ some suitable person as agent;" and, in advocating its passage, he boldly declared the school system, as it then existed, to be "not a blessing, except in the city of Providence, and possibly, a few other towns." He asserted that Rhode Island was behind the other New England states, and that the remedy for this was the appointment of a commissioner to revise the whole system, to codify the laws, and to visit and examine the schools throughout the state. The bill was passed, and Henry Barnard was appointed the school agent in December, 1843. In May, the following year, he made his report of a school law, which was passed June 27., 1845. This law created the office of commissioner of public schools, to be appointed by the governor, made provision for the financial support of the schools, defined the powers and duties of towns in regard to public education, provided for school-districts, and trustees of schools therein, and also for the examination and legal certification of teachers. Mr. Barnard's labors and services were very great; and he must stand second only to Horace Mann among the school reformers of New England. In his very first report, for 1845, he made a searching review of the school buildings and school methods prevailing in the state. Like Horace Mann, he strongly urged the employment of women as teachers, and spoke with satisfaction of the fact that he had caused the employment of more than fifty additional female teachers during the past year. He had also, he reported, seen more than fifty new school-houses built, mostly on plans furnished by himself. It was declared by the teachers of the state, on his retirement from office in 1849, that he had effected a "revolution" in school architecture; and the amount of printed matter circulated by him, was very great. More than 16,000 educational pamphlets were distributed by him gratuitously, exclusive of the official documents of the state, and the *Journal of the Institute of Education*. During one year, not an almanac was published in Rhode Island without at least sixteen pages of educational matter, added to it. During his five years of administration, more than eleven hundred educational meetings were held, at which more than fifteen hundred addresses were made. These facts are stated by Rev. Edwin M, Stone in his history of the Rhode Island Institute of Instruction, an organization which was formed in January, 1845, and rendered the most important aid to the labors of the commissioner. Mr. Barnard retired in 1849, on account of ill health, and was succeeded by Elisha R. Potter, now Judge Potter. This gentleman's legal experience was of the greatest benefit to the school legislation of the state. He secured the gradual abolition of the rate-bill system, which in many towns assessed part of the school expenses upon the pupils. He also established the principle of entire religious freedom in the public schools, taking the position that, under the Rhode Island constitution, the school committees had no right "to prescribe religious exercises for a school". The matter was to be settled by general consent; but no child could be compelled to take part in any religious exercise, in opposition to the wishes of his parents. Accordingly, in the local school laws of this state, the school committees usually "recommend" that the schools be opened with the reading of the Bible, but do not require it. Other important services rendered by Mr. Potter were the recommendation (in 1850) of a state board of education, and the persistent advocacy of a normal school. Through his efforts, a normal department was first established (1850) in Brown University, and was placed under the charge of Prof. S. S. Greene, then superintendent of the Providence schools, but whose title in the university was *Professor of Didactics*. To this arrangement, succeeded (in 1852) a private normal school. in Providence, taught by Messrs. Greene, Russell, Colburn, and Guyot; and finally (in 1854), a state normal school, under Dana P. Colburn. This school was afterward removed to Bristol, and, after Mr. Colburn's death, was placed under Joshua Kendall's charge. It was, however, abolished in 1865, but was re-established at Providence in 1871, under the care of J. C. Greenough, who still remains its principal. The successors of Mr. Potter in the office of school commissioner have been Robert Allyn (1854—7), John Kingsbury (1857—9), Joshua B. Chapin (1859—61, and again 1863—9), Henry Rousmaniere (1861—3), T. W. Bicknell (1869—75), and Thomas B. Stockwell, the present incumbent, elected in 1875.

A state board of education was created in 1870; and there have been various improvements in organization since that time, including the extension of the term of school committees from one to three years, and the authorization of a school superintendent in every town. Women have also been occasionally elected members of school committees, and have performed their duties with marked success. Evening schools have also received particular attention, being especially important in a manufacturing state like Rhode Island.

School System.—The constitution of the state provides (1) that "it shall be the duty of the general assembly to promote public schools, and to adopt all means which they may deem necessary and proper to secure to the people the advantages and opportunities of education"; (2) that "the money appropriated by law for the establishment of a permanent fund for the support of public schools shall be securely invested and remain a perpetual fund for that purpose"; (3) that "all donations for the support of public schools or other educational purposes shall be applied according to the terms prescribed by the donors." The officers of the system consist of (1) a state board of education, (2) a commissioner of public schools, (3) trustees of the state normal school, (4) town school committees, (5) town superintendents, (6) district trustees, and (7) district clerks, treasurers, and collectors.—The *state board of education* is composed of eight members, the governor and the lieutenant-governor being members, *ex officio*, and each of the five counties of the state being entitled to one member, except Providence, which is entitled to two. The members are elected by the general assembly for three years. This board has the general supervision and control of the public schools, its particular duties being to hold quarterly meetings, to prescribe and enforce general regulations, and to make an annual report to the general assembly. The governor of the state is the president of the board, and the commissioner, secretary.—The *commissioner of public schools* is elected annually by the board of education, and is the chief executive officer in the administration of the system. His duties are to advise with school officers and teachers in all matters pertaining to education; to visit and inspect the schools; to deliver addresses in the several towns on subjects pertaining to the progress of the schools; to arrange for and conduct teachers' institutes; to secure, as far as is desirable, a uniformity of text-books; to assist in the establishment of school libraries; to draw orders on the treasurer for the school moneys to which the towns are entitled; and to make an annual report to the board of education on the last Monday in December of each year. He also decides disputes and controversies arising in the administration of the school laws; but, if requested, he must lay a statement of the facts of the case before one of the justices of the supreme court, whose decision is final.—The *trustees of the normal school* consist of the members of the board of education and the commissioner of the public schools, and have the control, management, and general supervision of the normal school. They also examine candidates for teachers' licenses, and give certificates to such as are found qualified.—*School committees*, each composed of not less than three members, are elected in the towns for the term of three years, one retiring annually. Their duties are to meet for consultation at least four times a year, to fix the boundaries of school-districts, to locate school-houses, to examine and license applicants to teach, and to revoke licenses when necessary; to visit, by one or more of their number, every public school in the town at least twice during each term, to make rules for the management and instruction of the schools, and to draw all orders for the payment of the school moneys. They are at all times subject to the supervision of the commissioner. In towns under the district system, the trustees have the care of the district-school property, and make contracts with teachers; while the school committee exercises all other authority over the schools. *School superintendents*, elected by the voters of the towns, or, upon their failure to do so, by the school committees, perform such duties and exercise such powers as may be assigned to them by the school committees. *District trustees*, one or three for each district, as the latter may decide, are annually elected by the voters of the districts, but receive no compensation unless the district vote to levy a special tax for that purpose. They have the custody of the school property, and employ the teachers; and they are required to visit the schools twice each term, and to report to the school committee.—*District clerks*, one for each district, are elected by the voters of the district to keep the records of all meetings in the district, and of the boundaries of the school-districts.—*District treasurers* keep the school moneys, pay it out on proper orders, etc.; and *district collectors* are appointed to collect the taxes levied in the district for the support of schools.—The permanent *school fund* of the state, in 1875, amounted to $265,142.51, only the income of which may be appropriated to public schools. The *annual fund* for distribution among the schools, arising from state and local taxation, interest on permanent fund, and other sources, amounted to $761,796.92. The state appropriates annually $90,000 for the support of public schools—$63,000 to the several towns in proportion to the number of children under the age of 15; and $27,000 according to the number of school-districts in each town. The money thus appropriated—called *teachers' money*—can be used only for the payment of teachers' salaries. No town can receive any part of such state appropriation, unless it raise by tax, for the support of schools, an amount equal to what it is entitled to receive from the state. There is also a special state appropriation for evening schools.—Every district is required to maintain a school; and, if it neglect for seven months to open one, the town committee may establish a school, and employ a teacher. Two or more districts may unite to maintain a school for older children.—No minor under 15 years of age may be employed, under a penalty of $20, in any manufacturing establishment, unless he has attended school at least three months during the preceding year, nor may any such minor be employed for more than nine months in any year. Towns may enact truant laws.

Educational Condition.—The number of public day schools in the state, in 1875, was 737 (graded, 436; ungraded, 301); of evening schools, 39; and the number of school-houses, 426, the estimated value of which was $2,360,017. The receipts for the support of the schools were as follows:

From state appropriation for day schools	$90,000.00	
From state appropriation for evening schools	2,495.00	
From town appropriations	566,756.14	
" district taxes	47,626.43	
" other sources	54,919.35	
Total		$761,796.92

The expenditures for the same year were as follows:

For teachers' salaries, day schools	$383,284.14
" " " evening "	15,350.50
" sites, buildings, and furniture	274,326.41
" school supervision	11,681.02
" other purposes	80,001.67
Total	$764,643.74

The *school statistics*, for the year ending April 30., 1875, are the following:

No. of children of school age (4—16)		53,316
" " different pupils enrolled in day schools		38,554
Average number belonging		30,102
Average daily attendance		26,163
Number enrolled in evening schools		4,600
Average attendance " "		2,256
Number of teachers employed, males	195	
" " " " females	861	
Total		1,056
Average monthly salary of teachers, males		$85.18
" " " " females		$46.17
Average length of school term		9.38 mo.

In the following cities and towns, the town system of school management has been adopted wholly or in part: Providence, Bristol, East Providence, Newport, Warren, Woonsocket, Pawtucket, Barrington, and North Providence.—The commissioner's annual report for 1875 gives the following brief summary of what is now attempted in the public elementary schools: "An examination of our schools shows that reading, spelling, penmanship, arithmetic (mental and written), and geography are taught in all the schools of the state of an intermediate and grammar grade. United States history and English grammar are taught in most of our grammar schools. Vocal music is practiced in many of our schools, and taught in a few, particularly in those of all grades in Providence and Newport. Drawing is taught in the intermediate and grammar grades of Providence and Newport. Sewing is taught in a few of the schools in Providence."

Normal Instruction.—The Rhode Island State Normal School, at Providence, from its opening, September 1871, to January, 1876, gave instruction to 524 pupils, of whom 184 graduated from the institution. While fitting teachers for schools of a higher grade, it especially aims to prepare for teaching elementary schools,—primary, intermediate, and grammar. The whole number of pupils taught, during the year 1875, was 159. Three *teachers' institutes* were held under the direction of the state commissioner.

Secondary Instruction.—There are 13 cities and towns which have separate high schools or schools of that grade, either public or private, as follows: Providence, Newport, Woonsocket, Pawtucket, Hopkinton, Bristol, Warren, Westerly, Lincoln, East Greenwich, Barrington, Scituate, and East Providence. In his report for 1875, the commissioner remarks: "In the high schools, we find the pupils pursuing the studies of natural philosophy, chemistry, astronomy, botany, algebra, trigonometry, book-keeping, general history, mental and moral philosophy, English literature, and Latin and Greek." Three private academies and seminaries reported to the U. S. Bureau of Education, in 1875, a total of

269 students, of whom 130 were pursuing a classical course; 46, a course in modern languages; and 32 were preparing for college. The whole number of teachers employed in these schools was 18. The University Grammar School, at Providence, is the oldest institution of learning in the state, its foundation dating back to 1764. It was the germ of Brown University, under whose control it still is, and for which it has prepared nearly 300 students. The East Greenwich Academy is connected with Boston University. The Friends' Academy, Mowry and Goff's English and classical school, and Dr. Stockbridge's school for young ladies, all in Providence, are schools of high repute for efficiency. It should also be mentioned that the Rogers High School, in Newport, partakes, in some respects, of the nature of an academy, having been based, in its present form, upon the bequest of $100,000 to the city of Newport, to be used, under certain conditions, for the establishment of a high school. Four schools in the state for the preparation of students for college, in 1875, reported 33 teachers and 465 pupils. Two business colleges reported to the U. S. Bureau 19 teachers and 605 pupils —405 day scholars and 200 evening scholars.

Superior Instruction.—This grade of education is represented by Brown University (q. v.), first established at Warren, but, in 1770, removed to Providence. This institution contains an agricultural and scientific department.

Special Instruction.—The only institution of this character in the state is the Reform School, at Providence, in which both boys and girls are well cared for, being provided with the means for acquiring a common-school education, and trained in habits of neatness, order, and industry. In 1875, the whole number of inmates was 197, —boys, 162; girls, 35.

Teachers' Associations.—The Rhode Island Institute of Instruction held its thirtieth annual session at Providence, in January, 1875. This association, during its long career, has numbered among its members the most distinguished educators of the state, and has exerted a most important influence upon the progress of every department of education.

Educational Journals.—The first educational journal published in the state was the *Journal of the Rhode Island Institute of Instruction*, which was continued about three years, till 1849. Under the administration of commissioner Potter, the *Rhode Island Educational Magazine* was commenced, and continued for two years. In 1855, the *Rhode Island Schoolmaster* was first issued, and continued to be published for twenty years, being merged, in 1875, in the *New England Journal of Education*, now published in Boston, under the editorship of T. W. Bicknell.

For fuller information in regard to the educational history of this state, see the *Centennial Volume, A History of Public Education in Rhode Island from* 1636 *to* 1876, compiled by authority of the Board of Education, and edited by Thomas B. Stockwell, Commissioner of Public Schools (Providence, 1876). This volume includes *A History of the Public School System of Rhode Island*, by Thomas Wentworth Higginson.

RICHARDSON, Charles, an English lexicographer, born in July, 1775; died at Feltham, Middlesex, Oct. 6., 1865. Little is recorded of his early life or education. After some study of the literature of the law, he turned his attention to philology, which was always afterwards the business of his life. His principal works are: *Illustrations of English Philology* (London, 1815); *New Dictionary of the English Language* (1837); and *On the Study of Languages* (1854). It is on his dictionary that his fame principally rests. Its publication was begun in 1835, and finished in 1837; but its preparation was the labor of 20 years. Though now superseded in great measure by the larger works of Worcester and Webster, its reception at the time of its publication was remarkably cordial; and critical notices, almost without exception, mentioned it with praise. (See DICTIONARY.)

RICHMOND COLLEGE, at Richmond, Va., under Baptist control, was founded in 1844. It is supported by tuition fees and the income of an endowment of $100,000. The value of its buildings and grounds is $150,000. Its libraries contain about 6,000 volumes. The college is composed of eight independent schools; namely, of Latin, Greek, modern languages, English, mathematics, physics, chemistry, and philosophy. The students are free to choose any of these schools, but every one is required to attend at least three. The following degrees are conferred, according to the number and character of the schools attended: B. L., B. S., A. B., and A. M. The tuition fee varies from $50 per annum upward, according to the number of schools attended. In 1875—6, there were 7 instructors and 150 students. The presidents have been as follows: the Rev. R. Ryland, D. D., 1844—66; the Rev. Tiberius G. Jones, D. D., 1866—9; and B. Puryear, A. M. (chairman of the faculty), from 1869 to the present time (1876).

RICHTER, Johann Paul Friedrich, an illustrious German author, popularly known as Jean Paul, born in Wunsiedel, Bavaria, March 21., 1763; died in Baireuth, November 14., 1825. He was educated at the university of Leipsic, and, after leaving it, passed ten years of his life as a private tutor, his condition, during much of that time, being one of extreme poverty. While occupied as a teacher, he wrote several works; but, for a long time, was unsuccessful in finding a publisher, and was still longer in finding readers, the extravagance and oddity of his thought and style baffling popular comprehension, and depriving his genius of that recognition which it afterwards secured. The turning-point in his fortunes came at last, however; and, from 1793 to 1798, he published several of his best works, which rapidly raised him to a position among the most celebrated authors of his day. His views on education are embodied chiefly in his *Levana, oder Erziehlehre*, published in Brunswick, in 1807, and in Stuttgart, in 1861; an English translation of which was issued in Boston, in 1863. It is characterized by just and profound views expressed in striking language; and many of its aphoristic sayings have long since passed unquestioned into the literature of education.

RIDGEVILLE COLLEGE, in Ridgeville, Ind., under the patronage of the Freewill Baptist denomination, was founded in 1867, for the education of both sexes. It is supported by the income of a small endowment and by tuition fees, varying from $18 to $30 a year. It provides the following courses: classical, scientific, practical (of 3 years, intended to be equivalent to an ordinary high-school course), classical preparatory, and a general preparatory course. In 1875—6, there were 5 instructors and 112 students: classical, 1; scientific, 14; practical course, 5; classical preparatory, 1; general preparatory, 85; in instrumental music, 6. The Rev. Samuel D. Bates, A. M., is (1876) the president.

RIPON COLLEGE, at Ripon, Wis., was founded in 1851, and organized as a college in 1863. It is non-sectarian. It has an endowment of about $50,000, a library of over 3,800 volumes, a cabinet of minerals, and chemical and physical apparatus. The regular tuition fees vary from $21 to $24 a year. There is a collegiate department (with a classical and a scientific course), a preparatory, and a musical department. Both sexes are admitted. In 1875—6, there were 13 instructors, and 358 students (165 male and 193 female), of whom 69 were of collegiate grade, 244 preparatory, and 45 were studying music only. The Rev. William E. Merriman, D. D., was president of the college from 1863 to 1876, when he was succeeded by the Rev. Edward H. Merrell, A. M.

ROANOKE COLLEGE, at Salem, Va., founded in 1852, is under the patronage of the Lutheran Church, though not by its charter denominational. It derives its support from the fees of students ($50 a year). The college has a library of 14,000 volumes, extensive chemical and philosophical apparatus, a mineral cabinet containing over 11,000 specimens, and a museum of curiosities. There is a collegiate, a normal, and a preparatory department, besides a select course designed to afford a good business education. In 1875—6, there were 7 instructors and 171 students (93 collegiate, 31 select, and 47 preparatory). The Rev. D. F. Bittle, D. D., has been the president from the opening of the college.

ROCHESTER, University of, at Rochester, N. Y., under Baptist control, was founded in 1850. It is supported by tuition fees and the income of an endowment of $212,000. Its unproductive property (land, buildings, etc.) is valued at $378,662. It has extensive collections in geology and mineralogy, and a library of 12,500 volumes. The cost of tuition is $75 a year; but there are fifty scholarships affording free tuition. The university has a classical and a scientific course, each of four years, leading respectively to the degrees of A. B. and B. S. Eclectic courses are provided for those not candidates for a degree. In 1876—7, there were 8 professors and 163 students. Martin Brewer Anderson, LL. D., elected in 1853, has been the only president.

ROCK HILL COLLEGE, a Roman Catholic institution at Ellicott City, Md., under the direction of the Christian Brothers, was organized in 1857, and chartered in 1865. It has a geological and mineralogical cabinet, containing about 1,000 specimens; a herbarium, containing about 2,500 specimens; and a library of 6,500 volumes. The cost of tuition, board, etc., is $260 a year; of tuition alone, $80. The college comprises a preparatory and a collegiate department, the latter having a commercial course (2 years), a scientific course (4 years), and a classical course (4 years). In 1875—6, there were 29 professors and other instructors and 165 students (137 preparatory and 28 collegiate). The presidents have been as follows: Bro. Aphraates, Bro. Tobias, Bro. Lucian, and Bro. Bettelin (for the last 12 years).

ROD. See CORPORAL PUNISHMENT.

ROMAN CATHOLIC CHURCH is the name popularly given to the body of Christians who are in communion with the bishop of Rome and recognize him as their spiritual head. The Roman Catholic Church is by far the most numerous division of Christendom. The following table gives an estimate of the proportion, at present (1877), of Roman Catholics to the Protestants and to the total population of the world:

	Total population	Roman Catholics	Protestants
America..........	85,520,900	47,200,000	30,000,000
Europe...........	309,180,000	147,300,000	71,800,000
Asia..............	825,550,000	4,700,000	1,800,000
Africa............	199,920,000	1,100,000	1,200,000
Australia and Polynesia............	4,750,000	600,000	2,000,000
Total......	1,423,920,000	200,900,000	106,800,000

It will be seen, from this table, that the Roman Catholic Church embraces a majority of the total population of America, and nearly one-half of that of Europe; and that it exceeds the Protestant population in Asia, but is exceeded by it in Africa, and in Australia and Polynesia. France, Italy, Spain, Portugal, Belgium, the larger portion of Austria and Ireland, the Polish districts of Germany and Russia, a number of Swiss cantons, all the states of South and Central America and Mexico, are almost wholly inhabited by Roman Catholics.—From the downfall of the Western Roman empire toward the close of the 5th century, down to the 16th, the progress of education in all the western states of Europe was chiefly controlled by the Catholic Church. For a long time, the schools of the Benedictines, the convent, and the cathedral and collegiate schools, all of which were not only founded, but exclusively conducted, by priests, were the only institutions to which the rising generation of the new European states were indebted for their education. Charlemagne was the first monarch who conceived the idea of organizing a system of popular education; but he was so far from anticipating any conflict of jurisdiction between state and church that he spent his energies chiefly in urging the ecclesiastical authorities to establish a larger number of schools, all of which remained under the exclusive management of the church. The establishment of town and burgher schools, which assumed large dimensions after the 12th century, and, later, the rise of the universities, marks the beginning of the organization of schools which, though they had to conform their teaching strictly to the creed of the church, were partly or wholly managed by boards not exclusively consisting of church functionaries. The separation of a large portion of Europe from the Catholic Church, at the beginning of the 16th century, led, on the one hand, to the establishment of Lutheran and Reformed, and later of Congregational, Baptist, and other denominational schools, and, on the other hand, caused even the government in Catholic countries, to take a more direct part in educational matters. The Jesuits hoped, by means of superior schools, to preserve the Catholic Church from further losses and to recover the lost ground; and the extraordinary efforts made by them in this direction, led to the establishment of numerous colleges which excited the admiration of many patrons of education, even among Protestants, and which occupy a conspicuous place in the annals of education. The laurels won by the Jesuits as educators, proved a spur for the other religious orders of this Church; and not only did the Benedictines, Piarists, and other orders, vie with the Jesuits in the establishment of learned institutions, but a large number of orders and congregations specially devoted to teaching arose, which, from that time until the present day, have constituted a very large proportion of the instructors of Catholic schools of all grades.—In the course of the 18th century, the government in many countries began to look upon the general introduction and organization of popular education, as a state affair of the highest importance. Special state boards were intrusted with the care of schools; seminaries for the training of teachers were established; and, from a thorough conviction of the necessity of elementary education, many of the European states adopted the policy of making the instruction of all the children in the state obligatory. As religion formed an essential part of the course of instruction in every country, the government generally endeavored to secure the co-operation of the church authorities in the management of the elementary schools. In some cases, severe conflicts arose, as in Austria during the reign of the emperor Joseph II., against whose educational reforms the Catholic Church entered an earnest protest; but, as a general rule, the co-operation of the church authorities in the instruction and management of the state schools was secured. During the 19th century, the government of nearly every European country has endeavored, more and more, to centralize in its own hands the direction of schools of every kind; and though, in most states, Protestant as well as Catholic, the authorities of the Catholic Church have been invited to co-operate in the government and inspection of the elementary schools, the state governments have reserved to themselves the supreme right of legislation. The progress of this legislation has led to numerous conflicts between the governments and the Catholic Church. The articles in this work on the important countries of Europe furnish numerous details of these conflicts, as well as of the compromises by which many of them have been ended. The general tendency in Europe appears, however, at this time (1876) to be rather toward a widening than a narrowing of the conflict; since the legislatures in most states, Catholic as well as Protestant, are unwilling to concede to the Church that extensive control over the schools supported by the state, which she claims as belonging to her by divine right. Nowhere has the conflict between the state and the Catholic Church assumed such proportions as in Germany, and especially in Prussia. (See FALK, and GERMANY.) In but few states, in recent times, has so full an understanding between the two powers been arrived at as in Austria, which, by its concordat of 1855, conceded the most important demands of the Church. The majority of the *Reichsrath*, however, viewed the concessions thus made as derogatory to the rights of the state; and, in 1869, a new school law was passed which did not meet with the approval of the Catholic bishops.—In the *Syllabus of the Principal Errors of our Time*, which Pope Pius IX., in his Encyclical Letter of Dec. 8., 1867, communicated to all the Catholic bishops of the world, the following theories are stigmatized as contrary to the teaching of the Catholic Church: "(45) The entire direction of public schools, in which the youth of the Christian states are educated, except (to a certain extent) in the case of episcopal seminaries, may and must appertain to the civil power, and belong to it so far, that no other authority whatever shall be recognized as having any right to interfere in the discipline of the schools, the arrangements of the studies, the taking of degrees, or the choice or approval of the teachers. (46) Much more, even in clerical seminaries, is the course of study to be adopted subject to the civil authority. (47) The best theory of civil society requires, that public schools, open to the children of all classes, and, generally, all public institutions intended for instruction in letters and philosophy, and for conducting the education of the young, should be freed from all ecclesiastical authority, government, or interference, and should be fully subject to the civil and political power, in conformity with the will of the rulers and the prevalent opinions of the age. (48) This system of instructing youth, which consists in separating them from the Catholic faith, and from the power of the church, and teaching exclusively, or at least primarily, the knowledge of natural things and the earthly ends of social life, alone may be approved by Catholics."

In opposition to the theories stigmatized in the papal syllabus as the fundamental errors of our time, the Catholic bishops in all countries adhere to the following principles. Catholic youth, in schools of all grades, from the primary school to the university, should be brought up in conformity with the teaching of the Catholic Church. The Church should not be hindered in establishing free schools of all grades. When a state government organizes a system of public instruction, separate schools for Catholic youth should be established; and, in the Catholic schools, the Catholic Church should concur in the management and superintendence, in order to exclude or keep off all influences not in full accordance with the Catholic religion; and the religious instruction and education of the pupils should be placed under her control. As the school regulations relate chiefly to the primary schools, the negotiations between state governments and the Catholic Church aiming to bring about an amicable co-operation in the management of the schools, concern chiefly schools of that grade. In many countries, a co-operation of this kind exists; although, in but few countries has a perfect and lasting understanding, as in Belgium, been attained. (For information on this subject, the reader is referred to the articles on the several large countries.) Where the Church has found it impossible to secure the establishment by the state of separate schools for Catholic children, it has endeavored to supply the want by opening free parochial schools. (See Denominational Schools.)

As the establishment of colleges, gymnasia, academies, and other institutions of this grade by the state is far from being so general as that of primary schools, the attention of the Church, in this field, has been less directed to a co-operation with the state authorities than to the establishment of free secondary schools. Among the Catholic schools of this class, the colleges of the Jesuits occupy the first rank. (See Jesuits.) Numerous colleges and academies are also conducted by other religious orders; and the higher education, especially of Catholic girls, is, in many countries, to a great extent, carried on in convent schools, many of which have also a considerable number of Protestant pupils. The *Catholic Directory* of England for 1877, mentions 22 Roman Catholic colleges in England, and 1 in Scotland, which prepare their students for the universities and public examinations. Some of them are affiliated to the London universities. There are 6 English or Scotch Catholic colleges on the continent of Europe. In Ireland, the bishops made a vigorous opposition to the establishment by the government of undenominational *queen's colleges*. There were, in 1876, free Catholic colleges, affiliated with the Catholic university of Dublin, at Clonliffe, Tuam, Clane, Armagh, Carlow, Athlone, Tullamore, Thurles, Castleknock, Kilkenny, Fermoy, Longford, and Ennis.—In the United States, there were, in 1875, according to the Report of the Commissioner of Education, 52 chartered Catholic colleges or universities, situated in the following states and territories: Alabama, 1; California, 5; Illinois, 4; Indiana, 3; Kansas, 1; Kentucky, 2; Louisiana, 2; Maryland, 3; Massachusetts, 2; Minnesota, 1; Mississippi, 1; Missouri, 4; New Jersey, 1; New York, 7; Ohio, 2; Pennsylvania, 5; Tennessee, 1; Texas, 2; Wisconsin, 2; District of Columbia, 2; Washington Territory, 1.

The Church has now but little influence upon the great universities of Europe, which, in the middle ages, were almost entirely under her control. The faculties of Catholic theology, have, however, remained so far under her direction that the bishops may forbid the attendance of the students at any lectures which appear unsound in faith. The total abolition of the theological faculties in Italy and Spain, which may ere long be imitated in other countries, indicated a tendency to disconnect still more the university from the Church. In order to afford to Catholic students, in high schools purely Catholic, the same facilities for study which are afforded by the state universities, the Catholic Church, in several of the countries of Europe, has begun to establish free Catholic universities. The lead in this movement was taken by the bishops of Belgium, who founded, in 1835, the university of Louvain. Following their example, the Irish bishops founded, in 1854, the Catholic University of Dublin; and the English bishops, in 1875, the Catholic University College, at Kensington. A grand movement of this kind has taken place in France, where, up to the close of 1876, three Catholic universities had been organized. The Dominion of Canada possesses a similar institution in the University of Laval, at Quebec.

In addition to the theological faculties of the universities, there are schools of theology connected with most of the episcopal sees. Moreover, every male religious order supports schools of theology for its own members. (For a fuller account of these institutions, see Theological Schools.) The Council of Trent enjoined upon all bishops to establish special preparatory schools for such boys as intended to devote themselves to the study of theology. In many countries, these *seminaria puerorum* (boys' seminaries) are in successful operation, and educate almost the entire clergy; in others, they are almost unknown. In addition to the priests' and boys' seminaries, the Catholic Church possesses a number of missionary schools, for educating Catholic missionaries for pagan and non-Catholic countries. The most famous of these is the College of the Propaganda (*Collegium de propaganda fide*), in Rome. During the present century, a number of other missionary colleges have been founded, as All Hallows, near Dublin, and St. Joseph's College, of the Sacred Heart, for Foreign Missions, in England. The missionaries, in their turn, have established, in connection with their missions, a large number of colleges and schools, in pagan and uncivilized countries, many of which have gained, to a high degree, the confidence of the native population and the admiration of tourists.—In England, the United States, and Belgium, the Catholic Church has established a number of teachers' seminaries, independent of all state control; while, in other countries, as in Germany, the state concedes to the Catholic Church some degree of co-operation in the control of Catholic institutions of this class. In the schools which are under the absolute control of the Church, a very large proportion of the teachers are members of religious orders. The educational efforts of the Benedictines, Hieronymians, Jesuits, and Piarists have already been referred to. When the organization of elementary schools, in all the communities of civilized countries, assumed larger dimensions, La Salle (1679) founded the first organization of school brothers, called the Brethren of the Christian Schools. (See LA SALLE.) None of this order are allowed to enter the priesthood, or to hold any ecclesiastical office; but they bind themselves by a vow to devote themselves wholly to instruction, which is to be gratuitous, and conducted according to the method prescribed by the authorities of the congregation. How rapidly this congregation has grown, may be inferred from the fact that, while, at the death of the founder (1719), the congregation had 27 houses, 274 brethren, 122 classes, and 9,885 pupils, in 1869, it had 1,117 houses, 9,930 brethren, 7,435 classes, and 395,458 pupils. In the United States, 323 brethren gave instruction to about 15,000 pupils. The congregation of La Salle was followed by a number of similar congregations, most of which have houses in the United States. The majority of these congregations arose like the Brethren of the Christian Schools in France. As the school regulations drawn up by La Salle provide that at least two brethren must be sent to any locality in which there is a desire to intrust to them the elementary schools, many small places were unable to obtain their services. For the purpose of providing schools for such places, Abbé Jean de la Mennais founded, in 1820, in Brittany, a congregation which, in 1822, was sanctioned by the French government under the name of the Congregation of Christian Instruction. The Supreme Council of Instruction authorizes every member who holds a certificate from the Superior General of the congregation, to give instruction. The congregation, in 1875, had 150 houses, with about 800 members. The chief seat of the congregation is at Ploërmel, in Brittany.—In Belgium, the congregation of Xaverian Brothers was founded at Bruges, in 1839, by Théodore Sacques Ryken, with the special view to establish and conduct schools in the United States. They had, in 1875, several houses in Kentucky and Maryland.—In Ireland, the Rev. E. Rice, of Waterford, founded the order of the School Brothers of Ireland, which closely resembles the Brethren of the Christian Schools, and which has spread from Ireland to England, as well as to several of the English colonies. The female congregations which devote themselves to instruction are even more numerous than those of the School Brothers. The earliest, and still one of the largest, is that of the Ursulines, which was founded, in the 16th century, by Angela Merici, of Brescia (died 1540, canonized 1807), and the members of which, at the beginning of the 17th century, assumed, in addition to the three usual monastic vows, a fourth vow to instruct young girls gratuitously. The Ursulines spread from France into many countries of Europe and America, and, in 1875, had, in the United States, houses in New York, Ohio, Illinois, Georgia, Louisiana, Texas, Kentucky, and Missouri. The order of the Sisters of Notre Dame, or the School Sisters of the Blessed Pierre Fourier, was founded in France by Pierre Fourier (q. v.), at the close of the 16th century. The largest number of their houses is still found in France, but they have also spread to many other countries, and were, in 1875, represented in nine states of the American Union.—The Ladies of the Sacred Heart, an order founded in France in 1800, are chiefly devoted to the education of young ladies. The growth of this order has been very rapid, the number of its establishments, in France, amounting, in 1875, to 42, and in the United States, to 21.—In Canada, the Gray Nuns, or Sisters of Charity, of Montreal, an order founded in 1745, in 1875 had 24 houses in the Dominion of Canada and the United States; and in these countries several other less numerous congregations have been founded.

ROMANIC LANGUAGES, or **Romance Languages,** the collective name of those modern languages which, after the downfall of the Western Roman Empire, were gradually developed from the *lingua Romana rustica*, or vulgar Latin, by the admixture of German, Celtic, and other idioms. The independent Romanic languages are the Italian, Spanish, Portuguese, Provençal, French, and Roumanian (also called Wallachian or Daco-Roumanian). In the five former, the language of the Germanic conquerors of south-western Europe has left marked traces; while the Roumanian language has been considerably influenced by Slavic tongues. The language, called *Romansch*, which is spoken in some districts of the Swiss canton of Grisons and the Tyrol, is not regarded by Diez as an independent Romanic language. The most important among the Romanic languages are the French, the Spanish, and the Italian, the history and study of which are treated in special articles of this work. The *Comparative Grammar*, and the *Etymological Dictionary*, of the Romanic languages, by Friedrich Diez, are not only universally recognized as standard works on the subject, but are esteemed by all linguists as belonging to the classic productions of comparative philology. The derivation of the Romanic languages from the Latin has been fully treated by Fuchs (*Die Romanischen Sprachen in ihrem Verhältniss zum Lateinischen*, Halle, 1845), and by Pott, in Hofer's *Zeitschrift für Wissenschaft der Sprache*, in Aufrecht's and Kuhn's *Zeitschrift für vergleichende Sprachforschung*, and in the *Zeitschrift für die Alterthumswissenschaft*.

ROME, the capital of the ancient world, was founded, in 753 B. C., by the Latins, and was intended as a border fortress of Latium, on the Etruscan march. But that border fortress grew, step by step, to be the head of Latium, the head of Italy, the head of the whole Mediterranean region, the mistress of the world. "It is in Rome", says Freeman (*Comparative Politics*), "that all the states of the earlier European world lose themselves; it is out of Rome that all the states of the later European world take their being." Rome gathered unto itself the traditions of all that had ever been great and illustrious in the human race,—Assyrian, Egyptian, Persian, Hebrew, Phœnician, Greek, Etruscan; and extended its sway over the multitudinous western tribes —Italian, Gallic, Iberian, and Teutonic, the latter as yet only known as warriors. The civilization, the arts and sciences, the laws and institutions, the poetry and philosophy, the accumulated literary treasures of all past generations, were gradually merged in Rome. Its history, then, is that of the whole civilized world, down to the modern period. And yet, the history of Roman education is neither as interesting nor as valuable as that of Greece. In the latter country, a love for the esthetic predominated, the Greek taking a peculiar delight in the beautiful; but, with the Roman, the practical prevailed, and the beautiful was simply an esthetic amusement. He was harder, coarser, delighting more in power and less in beauty, more in facts and less in speculation, more in the real and less in the ideal. Rome's chief object was conquest, extension of power; and, hence, the education of her youth aimed to fit them for citizenship and for war.—Among the Latins and the Etruscans, though they had teachers, as we learn from Livy, literary training cannot have prevailed, as they were too much animated by warlike zeal. The priests cultivated religious science, and the principal subject of instruction was probably *divination*. In the early days of the Republic, education was entirely domestic; and the amount of intellectual culture was very scanty. Plutarch regarded it as a deficiency in the Roman laws that they did not, like those of the Spartans, prescribe a certain system of regulations for the education of youth; but, in fact, the manners and customs of the people replaced that want. For, first, education was not regarded, as in Athens and Sparta, as a duty of the state; and, secondly, woman had a much higher place than in the Greek states. Rome honored her vestal virgins, and the wife was not, as in Greece, the servant, but the companion of her husband, and was revered by him as the mother of his children. Maternal duties were considered sacred; and the careful nursing of infants, the needful occupations in the household, and the imparting of the rudiments of education, were regarded as the most prominent points of womanly merit. The so-called *patria potestas* gave to each head of a family an unlimited authority over all its members. But that tremendous power—which was felt and acknowledged to be a natural right—was never abused. The father was regarded with reverence and respect, though, probably, not always with very strong affection; for the Latin word *pietas*, which expressed the feeling of the dutiful child toward his parent, hardly implies much of love. After boys had attained the age when their mothers considered another instructor desirable, they were placed under the care of the *pœdagogus*. Frequently, these *pœdagogi* were liberated slaves. Sometimes, however, the father would himself assume this task, as, *e. g.*, Cicero and Cato Censorinus, who taught their children to read and write. Cato also trained his sons in gymnastics, the use of weapons, boxing, horseback riding, and even swimming, but never bathed with them, in order not to offend their modesty. The boys were also taught songs commemorating the courageous and heroic deeds of their ancestry, and were obliged to commit to memory the laws of the 12 tables. These were the usual subjects of instruction. The boys of wealthy parents had sometimes several *pœdagogi*.—The first schools in Rome were private, and were located in public booths or shops; hence, the name *trivium*. They were also characteristically called *ludi*, because their work was, in distinction from other practice, regarded simply as a recreation, or play. The first teachers were not paid any fees, which were not introduced until 201 B. C. The boys were conducted to these schools, which existed as early as 449 B. C., by *capsarii*, *i. e.*, slaves who carried the books, writing materials, etc. Vacations occurred only during harvest time. The first teacher was called the *literator*. He taught reading and writing, proverbs, and arithmetic, the latter being, on account of its usefulness, more esteemed by the Romans than by the Greeks. A second course devolved on the *grammatista*, who taught language, grammar, and composition. This work was completed by the *rhetor* in a more skillful manner. It was necessary, in order to be a well-educated Roman, to be a finished orator; and, therefore, very great stress was laid on correctness and pureness of expression. Mock-trials were of common occurrence, and attendance at the Forum was regarded as an obligation. The most distinguished teachers were either natives of the colonies or provinces, or freedmen of Greek extraction. Besides receiving instruction at home, the youth not unfrequently went to Athens, Rhodes, or Alexandria to complete their education.—The first favor bestowed by the government upon the teachers was under Julius Cæsar, who gave them the right of citizenship; and Augustus added exemption from all public duties and occupations. During his administration, several new schools of high repute were established in the provinces; among them, those of Mitylene, Massilia (Marseilles), and Corduba, to all of which students flocked in great numbers. To keep the young men at Rome, Augustus gave Flaccus Catiline's house, and paid him a salary of 100,000 sesterces ($3,600), and, besides, gave prizes to diligent scholars. Vespasian recognized the entire system of educational institutions as an integral element in the organism of the state. Existing schools, both elementary and higher, were strengthened as far as seemed necessary, and new facilities for instruction were added to those already in use. The first school resembling a college, called the *Athenæum*, was founded, professors of Greek literature were appointed, and the course of study was extended, after the Alexandrian model, to embrace the circle of the *artes liberales*—grammar, dialectics, rhetoric, geometry, arithmetic, astronomy, music—and drawing. Vespasian's successors, Hadrian, the two Antonines, Marcus Aurelius, and Alexander Severus—in a word, all the most virtuous, and not a few of the most sanguinary and atrocious, among the Cæsars, showed great zeal in the promotion of learning, in all its various forms, throughout the empire. The age of Marcus Aurelius is especially distinguished for the complete endowment of what may well be called the University of Athens. This munificent liberality of the Roman Cæsars was not without many happy effects upon literature and learning in the declining ages of the empire. Thus Athens, *e. g.*, became again the focus of learned activity in an age which, marred as it was by an increasing tendency to pedantry and affectation, still succeeded in reviving some reminiscences of the nobler past, and exhibited what has not inappropriately been described as the after summer of Greek genius.—Among Roman educational theorists are M. Terentius Varro, "the most learned man in Rome" (116—27 B. C.), and author of *Capys, aut de liberis educandis*; Cicero, who treats of education incidentally in his *De Officiis;* Tacitus, in *De Oratoribus*, commonly attributed to him; and Quintilian (40—118 A. D.), in the first book of his *Institutio Oratoria.* — See Bernhardy, *Grundriss der römischen Literatur;* Champagny, *Les Césars*, and *Les Antonines* (Paris, 1871); Friedlænder, *Sittengeschichte Roms*, vol. III. (4th ed., Leips., 1874), Teuffel, *Hist. of Roman Literature* (Lond., 1873); Pfeiffer, *Erziehung bei den Griechen und Römern* (Wien, 1867); *History of Education* (N. Y.,1874).

ROTE-TEACHING, or **Teaching by Rote** (Fr. *route*, road, whence *routine*), a method of giving instruction by means of constant repetition, particularly of certain forms of speech, with little or no attention to their meaning. Hence, such teaching is often described as *mechanical*, that is, impressing the memory through the ear and the eye, but not exercising the understanding. Rote-teaching may be regarded as an abuse of the principle of repetition. (See Association, and Concert Teaching.)

ROUMANIA, a dependency of Turkey, having an area of 46,710 sq. m., and a population of 4,500,000, mostly Roumans, but comprising also 150,000 Jews and 200,000 gypsies. About 90 per cent of the inhabitants belong to the Greek Church. Roumania was formed, in 1859, by the union of the two principalities of Moldavia and Wallachia.—Education in Roumania is in a depressed state. Although the school law of 1864 makes attendance compulsory, the schools have, nevertheless, very few pupils. The higher classes of society have their children instructed by private teachers; and, in some cases, send them to Paris to finish their education. The lower classes, on the other hand, do not generally send their children to school; and, in many places, no schools have been established. In 1875, Moldavia was reported to have only 15 public elementary schools, besides a few well-organized private institutions, established by Armenians; but, in Wallachia, almost every community has its elementary school. The total number of pupils in Roumania, in 1875, was about 55,000; while the number of teachers of all grades was about 4,000. There are 8 seminaries for the education of primary teachers.—Secondary instruction is afforded in gymnasia (of four classes), of which one must be supported in every district capital, in lyceums (of seven classes), and in real schools. In 1872, there were 7 lyceums, 14 gymnasia, and 1 real school, with an aggregate of 6,002 pupils. There are 2 universities—in Bucharest and Jassy, each having four faculties: philosophy and literature, law, medicine, and mathematics and natural science. Jassy, in 1872, had 155 students and 51 professors; Bucharest, 416 students and 46 professors. The institutions for scientific and professional instruction are 3 agricultural schools, 7 industrial schools, 7 commercial schools, 8 seminaries for Greek theology, a Roman Catholic seminary for priests, in Jassy, a school for engineering, a military school, in Bucharest, two art schools, in Jassy and Bucharest; and the central school of agriculture and forestry, in Ferestren. Besides these schools, there are several French and German private colleges.—See *Chronik des Volksschulwesens*, (1875); *Report of U. S. Commissioner of Education for* 1874.

ROUSSEAU, Jean Jacques, a celebrated French author, born in Geneva, June 28., 1712; died at Ermenonville, near Paris, July 2., 1778. He calls for notice here chiefly from an educational point of view. His father was a watch-maker, and was of French origin, though his family had been long settled in the city of Geneva. The boy was of a visionary, restless disposition; and his sickly habit soon led to his separation from other children of his age, and developed in him a fondness for works of fiction. After several years of wandering and of desultory work, the latter consisting of apprenticeships from which he invariably ran away, a priest at Confignon, in Savoy, introduced him to Mme. de Warens, at Annecy, who sent him to a charity-school in Turin. From this place, also, he ran away, and again became a wanderer. After another interval of adventure, he returned for shelter, in 1729, to the roof of Mme. de Warens, who sent him to a theological seminary at Annecy, from which he was dismissed as unfitted for the priesthood. Subsequently, he accepted a position as tutor in a private family in Lyons, where he remained two or three years, and, in 1741, went to Paris. Here he became intimate with Diderot, Grimm, D'Holbach, and Mme. d'Épinay, the last of whom, in 1756, provided a retreat for him in the vicinity of Paris, called the Hermitage. He maintained now for many years, by musical and literary labor, a doubtful struggle with adversity. In 1760, he published *Julie, ou La Nouvelle Héloïse*, which, by its idealization of Mme. d'Houdetot, offended his patroness Mme. d'Épinay, and led to his retirement from the Hermitage. The duke and duchess of Luxembourg now received him, and induced him to take up his residence at Montmorency, in one of their châteaux. While there, he wrote *Émile*, and the *Contrat Social*. The former was condemned by the parliament, and he was obliged to leave the country to escape arrest. He went to Geneva, then to Bern, and finally to Neufchatel, where he was befriended by the governor, Lord Keith. In 1767, he returned to France; and, after living in several places, settled again in Paris, in 1770. The hostility of the philosophers and literary men of Paris, which he had incurred, the persecution to which he had been subjected, and the privations he had endured, had preyed upon his health, which was now utterly broken. In 1778, he accepted the invitation of M. de Girardin to visit him at his country-seat at Ermenonville, where he died. His fame, however, suffered no diminution by his death, but steadily increased. In 1794, his remains were removed to the Pantheon at Paris, where a statue of him had been erected; and, in 1815, the allied sovereigns exempted Ermenonville from the payment of war taxes, in honor of his memory.—The character of Rousseau has been a puzzle to moralists. In him, the affectionate, sensitive nature of the girl, the subversive spirit of the communist, and the shamelessness of the libertine, were united. His writings have been the fruitful source of controversy, the bitterness of which has been aggravated by the errors of his life. The subtle beauty of his style, which has always commanded for him a place among the most illustrious of French prose writers, has served to place in stronger relief the radical and dangerous theories which it served to introduce. The virulence with which his writings were assailed during his life-time has not yet ceased, after the lapse of more than a hundred years.

Émile, ou de l'Éducation was published in 1762, and was the last product of the twelve years of his literary activity, nothing of the first importance being afterwards written by him, with the exception of the *Confessions*. It appeared at the time of the suppression of the Jesuits in France, when education, therefore, was a general theme; and nothing was more natural than that Rousseau, from his own point of view, should join in the discussion, and show how man, who in the state of nature was entirely good, might by education be preserved from the prevailing degeneration. We can give but the barest outline of the work. The parent is warned that nothing can compensate for the lack of his own time and attention in his children's education, and is assured that, should these be wanting, he will certainly repent of this neglect in the bitterness of sorrow, and never be comforted. But, in case a wealthy parent should not have sufficient time, he is directed in the choice of a governor or tutor, to one who should be the guide, philosopher, and friend of young Émile from his tenderest years to the time of his marriage. Why this shadowy, unreal personage should be set forth, as Émile's only source of instruction rather than his parents—why the exceptional case, rather than the general one, should be so fully worked out, can be explained only by the fact that Rousseau neglected so notably his own parental responsibilities.—From his second to his twelfth year, Émile is to live a life of healthy objectivity. There are to be no books, no moral discussions. He is not to be lectured or reasoned into submission, but must learn to bow to a law of necessity: his tutor must be firm with him. Punishment, also, that it may not seem arbitrary, is to be such only as naturally springs from his actions themselves. This period, therefore, is to be one of physical development mainly, only such moral notions being communicated as relate to the pupil's actual state. If we wish to see Émile in an English dress, we have but to turn to Harry Clinton, in Henry Brooke's *Fool of Quality* (1st ed., 1766; last edition by Charles Kingsley), or to Harry Sandford, in *Sandford and Merton* (1st ed., 1783).

From the age of 12 to that of 15, the notion of utility plays an important part in Émile's education. He is happy who keeps a due proportion between his desires and his powers. Desires may be for things necessary or unnecessary. Émile must, therefore, be accustomed to limit his desires to real needs; and his education must be such as will fit him, out of his own resources, to satisfy these needs. He must now learn geography, physics, and chemistry, but only so far as he can be brought to see their utility, and, therefore, to feel an interest in what he is doing. He is to read *Robinson Crusoe*, that he may learn to prefer the useful to the ornamental. He must even learn a trade, such a one as Crusoe found of most service on his desert island (namely, that of a carpenter).—In the fourth book, Émile learns to know his fellows, from whose contaminating influence he has hitherto been most carefully kept. As a preparative to entering into society, he reads Plutarch's *Lives*, and studies history. Now, also, when he is between 15 and 20 years of age, does he, for the first time, hear of God, and receive religious instruction. It is here that the well-known profession of faith of the Savoyard vicar is inserted. In connection with Émile's marriage, in the fifth book, Rousseau deals with the education of woman. His view is briefly this: that as woman exists only for man, her education must be entirely relative to him.—The groundwork of *Émile* is to be found in Locke; but Rousseau treated the subject with such interest as to provide a powerful stimulus for the educational workers of his time. His influence is distinctly seen in Basedow, Pestalozzi, and Richter, in Germany; and in Richard Edgeworth and Thomas Day, in England.—Mr. Morley writes forcibly of two great deficiencies in Émile's education: Rousseau, who was himself not strong on the intellectual side, as compared with the emotional, has not in his scheme made any adequate provision for thorough intellectual discipline; and, by keeping Émile in seclusion until he is on the verge of manhood, he has made it impossible for "a passion for justice" to develop itself. The merit of *Émile*, indeed, does not lie in its being a body of incontestable doctrine on education, but rather in its method, and in its sympathetic observation of children's ways from their earliest years. Any one who, like Thomas Day, should follow the directions in *Émile*, could not but be involved in ludicrous results (as may be seen very notably by referring to the life of Day's friend, Edgeworth); whilst William Cobbett, another reader of Rousseau, but one who mixed some common sense with what he read, has left us, in his *Advice*, a picture of family life and home education which is truly charming. "Not Rousseau's individual rules", says Richter, in the preface to his *Levana*, "many of which may be erroneous without injury to the whole, but the spirit of education which fills and animates the work, has shaken to their foundations and purified all the school rooms, and even the nurseries in Europe. In no previous work on education, was the ideal so richly and beautifully combined with actual observation as in his."—M. Alphonse Esquiros in his half-story, half-essay, entitled *L'Émile du dix-neuvième Siècle* (Paris, 1870), has followed in Rousseau's track, and considered from a present-day point of view the various problems in education from infancy onwards.—See Rousseau's *Émile*, particularly bks. I., II., III.; Morley's *Life of Rousseau*, especially ch. XIII.; Jules Paroz, *Histoire Universelle de la Pédagogie* (Paris, 1869); Quick, *Educational Reformers*; Girardin, *Rousseau, sa Vie et ses Ouvrages* (Paris 1875).

RUSSIA, an empire in eastern Europe and northern and central Asia, having an area of 8,563,421 sq. m., and a population of 86,486,000. The area of the Russian empire is inferior only to that of the British empire; while its continuous territory is larger than that of any other nation in the world. More than two-thirds of its population belong to the Greek Church; but, in the former kingdom of Poland, the Catholic religion prevails; and, in Finland and the Baltic provinces, the Lutheran Church is predominant. Mohammedanism is still the ruling religion in the new possessions in central Asia, its adherents numbering, in the entire empire, more than 7,000,000. The vast majority of the population of Russia belong to the Slavic race, the chief representatives of which are the Russians, comprising about 52,000,000. Of the other Slavic tribes, the Poles, numbering about 5,000,000, are the most numerous.

Educational History. — Until the beginning of the 16th century, no schools appear to have existed in Russia, except in a few convents. Ivan III. called foreign artists and scientists into the country; but no progress of importance could be made in education, because of the continual wars both foreign and intestine. Ivan IV. established schools in the cities, and, in 1564, founded the first Russian printing-office in Moscow. In 1588, the patriarch Jeremiah established a school in Kief, for instruction in reading and in the service of the church, which was gradually enlarged into the first theological academy. With the accession of Peter the Great, a new era began for education. He forbade any nobleman to marry who did not possess a knowledge of the elements of reading, writing, and arithmetic, and established, in all the cities, *arithmetic schools*, which imparted instruction in reading, writing, arithmetic, and the elements of geometry. Their original object was to prepare young men for the service of the state; and hence they were almost exclusively attended by children of government officers, who, upon leaving, were required to give the teacher one ruble. In 1719, *arithmetic schools* for children of all classes were opened, and also schools for the army, the navy, and the priesthood. Peter the Great also founded an academy of sciences, in connection with a gymnasium and a university. Under his successor, Catharine I., the Academy of Sciences was opened in Moscow, in 1755. The empress Anna allowed no private soldier or noncommissioned officer to be promoted who could not read, and the empress Elizabeth imposed fines on parents who allowed their children to grow up without any education. Catharine II. proposed to organize educational institutions throughout the country, according to a uniform plan; but, after experimenting for twenty years, she found that nothing of importance had been accomplished. She then determined to establish schools like the Austrian model schools; and, at her request, the Austrian government sent Von Jankowicz, the director of the Illyrian normal schools, to Russia. A commission of three was appointed to govern the schools established, which were to be of three kinds: higher schools, in the capitals of governments; intermediate schools, in the capitals of circles; and elementary schools, in small towns and villages. In every government, a school board was to be appointed, while the schools of the circles were to be governed by a director. A teachers' seminary was established in St. Petersburg; and, in the university of Moscow and the three theological academies, a three years' course was prescribed to prepare pupils for the seminary. The emperor Paul took an interest only in the progress of the higher schools. Alexander II., in 1862, established the ministry of "popular enlightenment." In 1874, a new school law was promulgated, which is in force at the present time. The necessity for a compulsory attendance law has, in recent years, been considerably discussed. In order to make a beginning, it was resolved, in 1875, to establish in St. Petersburg a sufficient number of schools, at the expense of the city, and to carry into effect the compulsory education of all children between the ages of 8 and 12 years. According to the calculation of the ministry, it will be necessary, to this end, to establish 157 primary schools, in addition to those existing at present. These schools will be governed by a school board of six members, besides the chief officer of the city government, who is to preside. For the absence of children, unless excused, parents are to be fined; and, when the offense is repeated, are to be imprisoned. One of the principal troubles under which the Russian schools are laboring at present, is the absence of unity in their government, every ministry having a number of special schools under its control.

Primary Instruction.—According to the new school law of 1874, the elementary schools comprise (1) the primary schools, under the direction of the clergy; (2) the primary schools, under the ministry of public instruction, both public and private; (3) the elementary schools, under other ministries, which are supported by the communes; and (4) Sunday-schools. The course of instruction comprises reading, writing, the four fundamental rules of arithmetic, the catechism, Bible history, and, as far as possible, singing. The language used in giving instruction must be the Russian. Religious instruction is confided to the clergy; while, otherwise, the superintendence is given into the hands of the nobility. The *ecclesiastical schools* consist of four annual courses, imparting free elementary instruction to the children of priests, but are open to other children for a small fee. The subjects of instruction are religion, the Russian and old Slavic languages, Latin and Greek, geography, arithmetic, spelling, and church history. Private schools may be established, with the consent of the director of the circle, either as day schools or boarding schools. This class of schools also comprises the schools of all other denominations. All private schools are divided into three kinds, having respectively the rank of a gymnasium, of a district-school, and of elementary schools. The numerous Jewish population of the western and southern governments, for a long time, possessed a complete system of private and public institutions, which were, up to 1864, left strictly to themselves. In that year, they were placed under the general school council, and were divided into three classes: elementary schools, intermediate schools, and schools for rabbis. In spite, however, of the exertions of the government, these schools are decidedly unpopular with the Jews. Quite recently a desire for the establishment of industrial schools has been evinced by the middle and lower classes of the people. These schools are rapidly increasing, and now comprise independent industrial schools, industrial schools in connection with district and commununal schools, and industrial schools in connection with charitable institutions. In the Polish provinces, the Sunday-schools are also industrial schools. The first Sunday-schools were opened in Kief, in 1859, by students who desired to instruct the laborers on Sundays and holidays. Shortly after this, similar schools were opened in St. Petersburg, and spread rapidly; so that, in 1862, there were already 300 schools, with about 20,000 pupils. Unfortunately, they did not exist long; for, in consequence of disturbances in two of these schools in St. Petersburg, the government ordered that all should be closed, with the exception of those in the school-district of Dorpat.—The schools in the circles must be regarded as an intermediate link between the elementary schools and the gymnasia. The law of 1828 provided that a district school should be established in the capital of every circle for the children of the merchants, the trades-people, and other inhabitants of the cities. The course of study comprises three annual classes; and the studies taught are religion, the Russian language, arithmetic, geometry, geography, and Russian and general history. In some of these schools, Latin, and in others French, is taught. These schools have considerably decreased in number, owing to the fact that some have been changed into progymnasia, and others into city schools. The education of teachers for primary schools is provided for in various ways. Special teachers' seminaries and teachers' institutes, have recently been established. The oldest seminary is that of Dorpat, founded in 1828. Since then, a number of seminaries have been established, partly by the government, partly by provinces and private endowments. Teachers' institutes have been established in connection with the city schools, the students in the highest classes being trained to instruct, under the supervision of their teachers. The normal number of pupils in each of these institutes is 75, of whom 60 are completely supported at the expense of the ministry of public worship; and the remaining 15, by funds from private persons, the government, the city, or other sources. The students, in return, are obliged to serve six years in a city school, wherever the government may send them. Besides, special courses of instruction for the training of school-teachers have been established in connection with a number of circle schools, gymnasia, and other institutions. For the education of teachers for the Mohammedan schools in the East, and in the Crimea, there are special schools in Kasan and Simpheropol. In 1874, there were 421 district schools, with 30,616 scholars, and 22,653 popular schools, with 933,900 scholars (748,866 boys and 185,034 girls). Included in this number are the church schools, the village schools of the Baltic provinces, and the industrial schools, *i. e.*, all the schools under the minister of public instruction. There were, also, in that year, 54 teachers' seminaries and institutes, with 25,552 students. The number of private schools, of all three grades, not belonging to any church, in 1869, was 886, with 31,500 children; and the number of denominational primary and district schools not belonging to the Greek Church, was 121, with 24,291 pupils. The number of ecclesiastical schools for the children of the clergy, in 1868, was 187, with 25,000 pupils. The number of ecclesiastical elementary schools, in 1868, was 16,287, with 390,049 pupils, of whom 335,130 were boys, and 54,919 girls. The statistics of the Jewish schools for Jan., 1., 1869, show the following: There are

2 schools for rabbis and Jewish school-teachers in Wilna and Schitomir, 5 schools of the second class, similar to the district schools, with 220 pupils; 96 schools of the first class, in which the Jewish religion, Russian and Hebrew, and arithmetic and penmanship, are taught; 51 reading and writing schools, in the school-districts of Wilna and Warsaw, with 1,982 pupils; 2 female schools, with 260 pupils, and a number of female reading and writing schools. Besides these schools, under the control of the government, there are a number of private schools, with about 26,500 pupils. In 1870, there were about 50 industrial schools, with about 3,000 pupils, and, in 1874, 115 Sunday-schools, with 8,565 male pupils and 22 female pupils. The following table gives the ratio of the number of schools, and of the number of pupils, to the total population, in each of the nine school-districts into which Russia is divided:

School-districts	Ratio of schools to total population	Ratio of pupils to total population
Dorpat	1 : 939	1 : 18
Warsaw	1 : 2,248	1 : 34
St. Petersburg	1 : 2,339	1 : 72
Odessa	1 : 3,814	1 : 81
Wilna	1 : 3,169	1 : 85
Kharkof	1 : 4,364	1 : 90
Kasan	1 : 4,076	1 : 100
Kief	1 : 3,708	1 : 144
Moscow	1 : 5,845	1 : 173

Secondary Instruction.—In the beginning of the present century, there were, in the whole empire, with the exception of the Baltic and Polish provinces, only 3 gymnasia. Catharine II., in 1776, established in the capitals of the governments people's high schools, and in the other cities lower people's schools, the former to consist of four the latter of two classes. In 1804, Alexander I. ordered that every capital of a government should have at least one gymnasium. The change of the people's high schools into gymnasia extended over twenty years; and finally, in 1825, 56 gymnasia, with 9,682 pupils, were established, making an average of 132 pupils to each gymnasium. The highest average, 448, was in the Wilna school-district; and the lowest, 69, in Kasan. In 1828, a reform was introduced. The gymnasia comprised seven annual classes, which had for their basis the study of the ancient languages. Latin was taught in all gymnasia, and in all classes; while Greek, which was not obligatory, was gradually introduced. In 1849, a new change was introduced, with the object of bringing the instruction in closer connection with practical life. Instruction was either general, in three lower classes, or special, in the other classes. In consequence of these changes, the gymnasia were divided into three groups: 36 gymnasia, in which natural sciences and law were taught; 29, in which law only was taught; and 12, in which Greek was retained. In 1864, an imperial decree classed all gymnasia as classical or real gymnasia. In the former, the classical languages, in the latter, mathematics and the natural sciences, were the principal studies. In 1872, the real gymnasia were changed into real schools, of from two to six classes, in which the ancient languages were entirely abolished. The progymnasia, of four classes, correspond to the four lower classes of the gymnasium.—Very little was done for female education in Russia previous to the middle of the last century. In 1764, the first institute for young ladies of the nobility was opened in St. Petersburg. Since that time, the number of these institutes, which are open only for the nobility, has considerably increased. The empress Maria Feodorowna took particular interest in these schools. As they pursued a particular object, however, and as they thus became separated from the general school system, they have always been under the particular charge of the reigning empress, and are known as the schools of the empress Maria. But not until the beginning of the reign of Alexander II., did the ministry of public instruction establish female schools for secondary instruction. These schools were of two grades,—schools of the first grade, corresponding to the gymnasia; and those of the second grade, corresponding to the district schools. By a law of 1870, the schools of the first grade were changed into gymnasia, and those of the second grade into progymnasia. In some of the former, a special course, of one year, was instituted for those pupils who wished to become governesses or teachers. The course of study comprises religion, the Russian language and literature, French or German, history, geography, natural history, arithmetic, geometry, the elements of pedagogy, drawing, and penmanship. English is taught for an extra fee of 5 rubles per year. This law, however, is only for the purely Russian provinces. In the Dorpat school-district, there are female schools with a higher and lower course, in which instruction is given by means of the German language. An exception to this rule is the female gymnasium in Riga. During the last decade, female gymnasia have also been established, in which girls of all ranks are admitted. In 1874, the number of gymnasia was 123, with 36,268 pupils; of progymnasia, 44, with 5,454 pupils; and of real schools, 30, with 4,275 pupils. In 1874, there were 195 female gymnasia and progymnasia, with 23,854 pupils, and 28 female institutes with 5,453 pupils. The number of gymnasia belonging to the schools of the empress, in 1870, was 57, with about 10,000 pupils. There were, also, in 1869, six gymnasia, with 1,617 male and 844 female pupils, belonging to other churches than the Greek church.

Superior Instruction.—The first effort to provide superior instruction in Russia was made by Peter the Great, who, in 1723, decreed the establishment of an academy of sciences and a university, at St. Petersburg. The academy was not opened until 1726, the year after the emperor's death; while the university only existed in name, as there were no students for it. Indeed, it was not until 1755 that the first Russian university was established at Moscow, by the empress Elizabeth. It consisted of three faculties, and was entirely modeled after the German universities. Under Catharine II., after the division of Poland, the Wilna Academy was added to the higher institutions of learning; and, in 1803, it was raised to the rank of a university. In 1802, the Dorpat University, founded by Gustavus Adolphus in 1632, was entirely reorganized; and, in 1804, the universities of Kharkof and Kasan were founded. On account of the poor condition of the schools for secondary instruction at that time, the number of students and of good professors, was at first very small; and more than one-half of the latter were foreigners. The native professors were educated in the principal pedagogical institute, which was founded at St. Petersburg, in 1804. This institute did not have a long existence; for, in 1819, it was changed into the University of St. Petersburg. In 1832, on account of political disturbances, the Wilna University was closed, with the exception of the medical faculty, which continued to exist as the Medico-Surgical Academy. In its place, the St. Vladimir University of Kief was formed from the lyceum, which shortly before had been transferred to that place from Kremenets. In 1835, a new university law was passed, which withdrew from the universities the superintendence of the other schools, and gave to a particular inspector the discipline of the students. A decree of the emperor Nicholas, in 1849, limited the number of students in each university to 300; but this decree was revoked in 1856. In 1863, a new general law for the imperial universities was published, intended for all except that of Dorpat, which continued to be governed by its special charter of 1820. In accordance with this law, in 1865, the Russian university of Odessa, previously a lyceum, was established; and, in 1869, Warsaw University, previously a high school. According to the new law, every university must be composed of at least four faculties: of history and philology, of natural philosophy and mathematics, of law, and of medicine. From this order, however, there are many deviations. Thus the University of St. Petersburg has no medical faculty; but, instead thereof, a faculty of oriental languages. In the University of Odessa, the medical faculty has not yet been opened: in that of Dorpat, there is, in addition to the four mentioned above, a faculty of Protestant theology. A candidate for admission to the university must be, at least, 17 years of age, and must possess a certificate of graduation from a gymnasium. The entire university course comprises 5 years in the medical faculty, and 4 in all the others.

In 1804, Alexander I. ordered that the course of instruction of some of the gymnasia should be extended, and that gymnasia for the higher sciences should be established, as stepping-stones from the gymnasia to the universities. In a short time, four such institutes were founded, chiefly at the expense of private persons: (1) that of Yaroslav, in 1805, which was changed into a lyceum in 1833; (2) the Volhynian gymnasium, founded at Kremenets, in 1805, changed into a lyceum in 1820, transferred to Kief in 1832, and subsequently changed into a university; (3) the Lyceum Richelieu, founded in 1817, and afterward changed into a university; and (4) the Gymnasium for Higher Learning, founded in Nezheen, in 1820, which received the name of lyceum in 1832. The lyceums under the minister of public instruction have three classes, each for one year; a lyceum belonging to the Schools of the Empress Maria has four classes, of one and one half years each; while the Lyceum of the Grand-duke Nikolai, in Moscow, has an eight years' course.

The following table presents the statistics of the universities for 1875:

Universities	Instructors	Students
St. Petersburg............	86	1,196
Moscow....	97	1,473
Kharkof...................	65	418
Kasan..........	69	522
Kief........................	72	859
Odessa.....................	42	316
Dorpat.....................	63	794
Warsaw....................	75	830
Total..............	569	6,408

Of the total number of students, 36 per cent study law; 31 per cent, medicine; 14 per cent attend the course of mathematics and natural philosophy; 9 per cent are free hearers, but only 8 per cent attend the historical and philological faculty. The remaining 2 per cent are made up of the theological students in Dorpat and the students of oriental languages in St. Petersburg. The number of lyceums, in 1874, according to the Russian *Annals*, was 5, with about 600 students.

Special Instruction.—The special schools belong to different ministries. The following statistics are for Jan. 1., 1874. There are 4 higher theological schools, with 178 professors and 446 students; 51 intermediate theological schools, with 789 professors and 13,103 students; and 187 lower theological schools, with 1,375 professors and 26,671 students; 7 higher, 25 intermediate, and 31 lower military schools, with 1,416, 6,330, and 6,863 students, respectively; 7 naval schools, with 1,109 students; 3 higher and 16 lower agricultural schools, with 293 and 1,025 students, respectively; 6 higher technical schools, with 2,666 students, 12 lower technical schools, 5 schools of art and drawing, 3 schools of music and the drama, 4 business colleges, 1 law school, with 320 students, and 3 schools of philology.

Caucasia.—The schools of Finland (q. v.) and of the Caucasus are the only schools in the whole empire that are not subject to the Russian government, but to their own school authorities. Caucasia forms one school-district, the inspector of which is responsible to the governor only. In 1862, there were, in Caucasia, 4 gymnasia, 20 district schools, 1 progymnasium, 18 elementary schools, 31 private schools, and 13 schools belonging to the church, making a total of 87 schools.

with 7,362 pupils.—See Schmid, *Pädagogische Encyclopädie*; Rolfus and Pfister, *Real-Encyclopädie des Erziehungs- und Unterrichtswesens*; Lengenfeldt, *Russland im neunzehnten Jahrhundert*; *Report of the U. S. Commissioner of Education*, 1874; *Chronik des Volksschulwesens*, 1875.

RUTGERS COLLEGE, at New Brunswick, N. J., under the control of the Reformed Church in America, was founded in 1770. It is supported by tuition fees and an endowment of about $400,000; the value of its buildings, grounds, and apparatus amounts to about the same sum. Its cabinets and apparatus are extensive; the libraries contain about 9,500 volumes. There are two departments: the classical or college proper, and the scientific (state college of agriculture and the mechanic arts, endowed with the congressional land grant). The latter department has three courses: civil engineering and mechanics, chemistry and agriculture, and a special course in chemistry. There is an extensive model farm. The tuition fee in both departments is $75 per annum. There are a number of beneficiary funds for the aid of students intended for the ministry; and 40 students, resident in the state, are admitted to the scientific department without charge. In 1875—6, there were 13 professors and 188 students (131 classical and 57 scientific). The Rev. Wm. Henry Campbell, D. D., LL. D., is (1876) the president.

RUTHERFORD COLLEGE, at Happy Home, Burke Co., N. C., was commenced by its present and only president, the Rev. R. L. Abernethy, A. M., in 1854, and was chartered as Rutherford Academy in 1858. In 1861, under the title of the Rutherford Seminary, it was given the right to confer degrees; and, in 1870, it was made a college. It is a college for young men, with a *ladies'* department. Each sex has its own curriculum; but the females recite with the males in all those classes in which the courses of study are the same. The college is composed of six regular schools: Latin, Greek, mathematics, English literature and rhetoric, natural science, and mental and moral philosophy. The libraries contain about 3,500 volumes. The cost of tuition ranges from $1 to $5 a month. The children of ministers of all denominations of Christians, as well as all indigent orphans, are instructed free of tuition charges. In 1874—5, there were 19 instructors and 319 students (229 males and 90 females), mostly of the preparatory grade.

RYERSON, Adolphus Egerton, a noted Canadian clergyman and educator, born at Charlotteville, near Victoria, in the province of Ontario, March 24., 1803. He at first taught school, but in 1825 entered the Wesleyan ministry, and, in 1829, assumed the editorship of the *Christian Guardian*, a Methodist journal, established by himself. In 1842, he was appointed principal of Victoria College, Cobourg, C. W., and two years afterward, chief superintendent of education for Upper Canada, now Ontario, which position he still occupies. Mr. Ryerson's services as a superintendent have been quite distinguished. The public-school system which is under his supervision was organized upon a plan arranged by him, in 1849; and his school reports have uniformly presented very valuable material. He has also published a history of Canada, and has written a history of the *British United Empire Loyalists*, who emigrated from the United States to British America in 1783.

SAINT AUGUSTINE, Missionary College of, at Benicia, Cal., an Episcopal institution, was founded in 1867, and incorporated in 1868. The course of study is arranged for eight *forms* or classes, in three departments; namely, primary, grammar school, and collegiate (in which ancient and modern languages are optional). The students are under military discipline, and instruction is given in infantry, cavalry, and artillery tactics. The regular charge for board, tuition, etc., is from $350 to $370 per annum. In 1875, there were 12 instructors, and 89 students. The Rt. Rev. J. H. D. Wingfield, D. D., LL. D., is (1876) the rector.

SAINT BENEDICT'S COLLEGE, at Atchison, Kan., a Roman Catholic institution under the superintendence of the Benedictine Fathers, was founded in 1859, and chartered in 1868. It has a preparatory, a commercial, and a classical department. The regular charge for tuition, board, etc., is $90 per session of five months; for tuition alone, $25. The library contains 2,000 volumes. In 1874—5, there were 6 instructors and 79 students. The Very Rev. Oswald Moosmueller, O. S. B., is (1876) the president.

SAINT CHARLES COLLEGE, at Grand Coteau, La., a Roman Catholic institution, under the direction of members of the Society of Jesus, was founded in 1836, and incorporated in 1852. The course of instruction embraces Latin, Greek, English, French, poetry, rhetoric, history, geography, mathematics, natural and mental philosophy, with the addition of the usual commercial branches. It had the highest number of students in 1861, just before the breaking out of the civil war. Recently the numbers have declined, owing to the impoverished state of the country. The libraries contain 5,500 volumes. The regular charge for board, tuition, etc., is $250 a year. In 1876, the number of students was 35. The Rev. R. Ollivier, S. J., is (1876) the president.

SAINT CHARLES'S COLLEGE, near Ellicott City, Md., under Roman Catholic control, was chartered in 1830, and organized in 1848. It was founded by Charles Carroll of Carrollton, and forms the *petit séminaire* and classical department of St. Mary's University and Theological Seminary of St. Sulpice, Baltimore. The course of instruction is a full classical one, requiring a period of 6 years for those who complete it, and embracing all the branches preparatory to the higher ecclesiastical studies; such as Latin, English, Greek, French, German, *belles-lettres*, mathematics, sacred and profane history, Christian doctrine, plain chant, and church ceremonies. The libraries contain 4,500 volumes. The charge for tuition, board, etc., is $90 per half session of five months. In 1875—6, there were 12 instructors and 175 students. The Rev. S. Ferté, D. D., is (1876) the president.

SAINT FRANCIS XAVIER, College of, in New York City, a Roman Catholic institution conducted by the Fathers of the Society of Jesus, was founded in 1847, and chartered in 1861. It is supported by a tuition fee of $60 per annum from each student. Its library contains 16,000 volumes. It has a post-graduate course of one year, leading to the degree of A. M.; an under-graduate course of four years, leading to the degree of A. B.; a grammar course of three years, preparatory to the preceding; a commercial course of three years; and a preparatory or elementary course, for beginners. In 1875—6, there were 26 instructors and 456 students. The following have been the presidents of the college: the Rev. John Larkin, the Rev. John Ryan, the Rev. Michael Driscol, the Rev. Joseph Durthaller, the Rev. Joseph Loyzance, and the Rev. Henry Hudon, the present incumbent (1876).

SAINT IGNATIUS COLLEGE, in San Francisco, Cal., was opened in 1855, and chartered in 1859. It is a Roman Catholic institution, conducted by the Fathers of the Society of Jesus. The course of studies embraces the Greek, Latin, and English languages, poetry, rhetoric, elocution, history, geography, arithmetic, book-keeping, penmanship, mathematics, chemistry, and mental, moral, and natural philosophy. The study of the French and Spanish languages is optional. There is also a preparatory department. The regular tuition fee ranges from $3 to $8 a month. In 1875—6, there were 22 instructors and 758 students. The Rev. A. Masnata, S. J., is (1876) the president.

SAINT IGNATIUS COLLEGE, in Chicago, Ill., a Roman Catholic institution conducted by members of the Society of Jesus, was founded in 1870. It possesses a library of 10,000 volumes; and a museum containing a rare and valuable collection of minerals. It comprises a classical course of six years, corresponding to the preparatory and collegiate departments of most colleges, a commercial course of four years, embracing all the branches of a good English education; and a preparatory or elementary course. The cost of tuition is $60 a year. In 1874—5, there were 11 instructors and 214 students. The presidents have been as follows: the Rev. A. Damen, S. J., 1870—72; the Rev. F. Coosemans, S. J., 1872—4; and the Rev. J. De Blieck, S. J., since 1874.

SAINT JOHN'S COLLEGE, at Fordham, New York City, was founded by the Rev. John Hughes, first Roman Catholic archbishop of New York, and was opened in 1841. It was chartered in 1846, and the same year was transferred to the Jesuits, by whom it has since been conducted. It is supported by the students' fees for board and tuition, amounting ordinarily to $300 per annum; the charge to day scholars is $60 per annum. The college library contains 20,000 volumes, besides which the students have the use of a circulating library of over 5,000 volumes. There are valuable chemical and philosophical apparatus, and a geological and mineralogical cabinet, with about 2,500 specimens. The college combines the ordinary features of preparatory, grammar, and commercial schools with those of a university. There are also several supplementary classes. Students are received at any age. In 1875—6, there were 21 instructors and 178 students. The presidents have been as follows: the Rev. John McCloskey, now Cardinal Archbishop of New York; the Rev. Ambrose Manahan, D.D.; the Rev. Roosevelt Bayley, now Archbishop of Baltimore; the Rev. James Early, A. M.; the Rev. Aug. J. Thèbaud, S. J.; the Rev. John Larkin, S. J.; the Rev. Remigius J. Tellier, S. J.: the Rev. Edward Doucet, S. J.; the Rev. William Moylan, S. J.; the Rev. Joseph Shea, S. J.; and the Rev. William Gockeln, S. J., the present incumbent (1876).

SAINT JOHN'S COLLEGE Brooklyn, N. Y., a Roman Catholic institution, conducted by the Priests of the Congregation of the Mission, was founded in 1870. It has a full classical, an English, and a commercial course, including French and German. The cost of tuition is $15 per quarter. In 1875—6, there were 6 instructors, and 145 students. The Rev. P. M. O'Regan, C. M., is (1876) the president.

SAINT JOHN'S COLLEGE, at Annapolis, Md., was chartered in 1784, and opened in 1789. From 1861 to 1866, it was closed in consequence of the civil war. It is supported chiefly by state appropriations, at present amounting to $25,000 a year, in return for which 150 students (6 from each senatorial district) are entitled to room rent and tuition free; and 50 of these (2 from each senatorial district) are entitled, in addition, to gratuitous board. These latter are required to teach school within the state for not less than two years after leaving college. For those not holders of scholarships, the annual charge for tuition, board, etc., is $275; for tuition alone $60 in the preparatory, and $90 in the collegiate department. The library contains 5,000 volumes. The collegiate department embraces an undergraduate course of four years, leading to the degree of A. B.; a post-graduate course of two years, leading to the degree of A. M.; and select courses. In 1875—6, there were 11 instructors including those in music and gymnastics, and 121 students (69 collegiate and 52 preparatory), of whom, including the 50 who receive gratuitous board, about two-thirds were instructed free. The number of *alumni* was 481. The principals of the College have been as follows: John McDowell, LL. D. (appointed in 1790); the Rev. Bethel Judd, D. D. (1807); the Rev. Henry Lyon Davis, D. D. (1820); the Rev.

William Rafferty, D. D. (1824); the Rev. Hector Humphreys, D. D. (1831); the Rev. Cleland K. Nelson, D. D. (1857); Henry Barnard, LL. D. (1866); James C. Welling, LL. D. (1867); and James M. Garnett, M. A., LL. D. (1870).

SAINT JOHN'S COLLEGE, 4 miles from St. Joseph, Stearns Co., Minn., a Roman Catholic institution, conducted by the Benedictine Fathers, was founded in 1857, and chartered the same year, under the name of St. John's Seminary, but it is better known as St. John's College. By an act of the legislature, approved March 5., 1869, it is "authorized to confer such degrees and grant such diplomas as are usual in colleges and universities." It is supported by the fees of students, the regular charge for tuition, board, etc., being $90 per session of five months. The institution comprises an ecclesiastical, a classical, a scientific, a commercial, and an elementary course. The libraries contain about 2,000 volumes. In 1874—5, there were 15 instructors and 168 students (30 ecclesiastical, and 138 classical and commercial). The Rt. Rev. Alexius Edelbrock, O. S. B., D. D., is (1876) the president.

SAINT JOHN'S COLLEGE OF ARKANSAS, at Little Rock, was chartered in 1850, and opened in 1859. It was founded by the Masonic Fraternity of Arkansas, and has been sustained by the Grand Lodge since its opening. It was suspended from May, 1861, to October, 1867, during the greater part of which time the building was used as a hospital either by the Confederate or by the Federal troops. The value of the college property is $72,600. The cost of tuition is $50 per annum, except to sons of Masons within the jurisdiction of the Grand Lodge of Arkansas, who are instructed without charge. The college has a preparatory course of three years, a course for A. B. (4 years), a course for Sc. B. (3 years), and a course for Ph. B. (2 years). In 1875—6, there were 3 instructors and 55 students. R. H. Parham, Jr., A. M., is (1876) the president.

SAINT JOSEPH'S COLLEGE, at Teutopolis, Ill., was founded in 1861, under the auspices of the Rt. Rev. H. D. Yunker, D. D., Roman Catholic bishop of Alton, and is under the direction of the Franciscan Fathers. The course of studies embraces the Greek, Latin, English, French, and German languages; rhetoric, poetry, composition, history, geography, book-keeping, arithmetic, mathematics, natural philosophy, natural history, drawing, penmanship, and instrumental and vocal music. The study of German (for English students), French, book-keeping, drawing, and music, is optional. It is an ecclesiastical seminary (designed to prepare candidates for the priesthood for the study of philosophy and theology), and admits only Catholic pupils; but the course also furnishes a qualification for secular pursuits. There are two preparatory and four collegiate classes. The charge for tuition, board, etc., is $75 per session of five months to those studying for the priesthood, and $90 to others. In 1875—6, there were 10 instructors and 112 students. The Very Rev. P. Mauritius Klostermann, O. S. F., is (1876) the rector of the College.

SAINT JOSEPH'S COLLEGE, in Buffalo, N. Y., a Roman Catholic institution conducted by the Christian Brothers, was founded in 1861. It is supported by the fees of students, the regular charge for board and tuition being $200 a year; for tuition alone, from $16 to $50 a year. The institution comprises three departments: primary, 2 years; preparatory collegiate, 4 years; and collegiate, 4 years. There is a commercial course, and facilities are afforded for instruction in music and drawing. The library contains 2,500 volumes. In 1875—6, there were 11 instructors and 318 students. The Rev. Bro. Joachim is (1876) the president.

ST. LAWRENCE UNIVERSITY, The, at Canton, N. Y., chartered and organized in 1856, is under Universalist control. It comprises a college of letters and science, and a theological school, independent of each other in their faculties, and in the instruction and government of their students. Its productive funds amount to $165,000, and its libraries contain 7,366 volumes. Both sexes are admitted to each of the departments. The college has a classical and a scientific course, each of four years. In 1875—6, it had 8 instructors and 54 students (28 males and 16 females); the theological school had 3 professors and 28 students. The Rev. A. G. Gaines, D. D., is (1876) the president of the college, and the Rev. E. Fisher, D. D., is the president of the theological school.

ST. LOUIS, the chief city of Missouri and of the Mississippi valley, having a population, in 1870, of 310,864, and an estimated population, in 1875, of 450,000.

Educational History.—On the 13th of June, 1812, the Congress of the United States passed an act to set apart certain lands in St. Louis and other towns in Missouri, "for the support of schools in the respective towns or villages aforesaid." In 1817, an act was approved by which a board of trustees for the schools of St. Louis was incorporated. The first business of the board was to define and take possession of the school lands previously given. This was a matter of some difficulty, as the original act conveying the land contained a proviso to the effect that the rights of claimants should not be violated; and such claimants, by action in the courts, prevented the using of the land for school purposes, till two supplementary acts of Congress, in 1824 and 1831, compelled them to prove their titles. The tract of land thus conveyed to the city comprised a little less than 50 acres, and is the land now reported annually by the board of public schools, as "real estate held for revenue." A new school board was created in 1833 by the legislature, styled the "Board of President and Directors of the St. Louis Public Schools." An election took place, the same year, which resulted in the choice of six school directors, Edward Bates being of the number. The first money from the rent of the school lands was received in 1834; and, the following year, the money was loaned, by permission of the legislature, the time for establishing schools not yet having arrived. In 1837, two school-houses were built—the south and the north school-house—the former of which is still standing on the corner of Fourth and Spruce streets. The latter was abandoned in 1842, and was afterwards burnt. In April, 1838, the first school was opened; and, shortly after, the second. In 1841, the third school-house was built at a cost of $10,925, an expense which the board was very much embarrassed to meet In 1845, two more school-houses were built, and, the following year, occupied. Other schools followed. In 1849, two evening schools were opened. The first high school was established in 1853, with an attendance of over 70 pupils. On the first Monday in June, 1849, the question of supporting the public schools by taxation was voted upon by the people, the legislature having so directed, in answer to a petition from a committee of the school board. The anxiety felt by the friends of popular education in regard to this election proved to be unnecessary, as the law was endorsed by a large majority; and the first tax under it, amounting to $18,000, was collected the following year. At the session of 1853—4, the legislature repealed the law by which St. Louis was prevented from participation in the state school fund. This law had been passed on the erroneous supposition that the special grant of land made to the city by Congress, in 1812, would be ample for school purposes. On the establishment of the high school, the same opposition to it was encountered that has been observed in other cities during the first half of the century. This opposition arose from a conception, common at that time, that it was unjust to tax the people generally for any thing beyond elementary instruction. In the school board, fortunately, were several men of sufficient foresight and firmness to disregard the clamor of the hour, and to provide for the new school in the most efficient manner. The wisdom of their action is proved by the fact that, in the words of the present superintendent, "no other measure ever adopted by the Board has had so powerful an influence as this in popularizing and strengthening the public schools." In 1855, the school buildings were found insufficient to accommodate the children of the city, and primary schools were established in leased houses. The success of the schools of St. Louis now attracted attention throughout the state, and a law was passed by the legislature, appropriating 25 per cent of the state revenue to the support of free schools. By this apportionment, St. Louis received $27,456.51, in 1854. The schools had now been in operation about 20 years, and the increase in the number of pupils caused the want which always attends this increase—that of trained teachers—to be severely felt. In 1857, accordingly, the first normal school was established, and Ira Divoll became superintendent of schools. The city had now gone so far in the completion of its school system, that the remaining steps were easy. The Franklin school-house was begun in 1857, but was not finished till the following year. It was built on the Lancasterian plan, then extensively used in nearly all of the large cities of the Union, and was the last house so built by the city, the era of graded schools, which required a different plan, having begun. In the summer of 1857, the new superintendent went upon a tour of observation through the principal eastern cities, and on his return, drew up a comprehensive plan for the re-organization of the school system, in every thing that related to the construction and size of school-houses, the style of furniture and appointments, the mode of organization and classification, methods of instruction, etc.; and the principles then discussed and agreed upon were made the basis upon which an entire reconstruction of the system was begun. It was ordered that the school-houses should be built thereafter according to the plan for graded schools, that they should be, as nearly as possible, of uniform size, and that they should be the property of the city; that pupils should be classified according to attainment; and that there should be but one organization and one principal teacher for each building. The city, at that time, contained 135,000 inhabitants, of whom 25,000 were children of school age; yet the schools could accommodate only 5,361. This insufficiency of the school accommodations was forcibly presented to the board by Mr. Divoll in his report for 1858, and the erection of several new buildings was urgently recommended. Eight new school-houses were, accordingly, begun, and shortly after, four of the old buildings were reconstructed, and made to conform to the new plan. The changes went steadily on till all the old school-houses were adapted to the graded system. The German language was introduced into five of the public schools of the city, in 1864, as an optional study for pupils who had advanced in English as far as the "Second Reader and Primary Geography." A serious difficulty immediately presented itself—that of finding teachers properly qualified to give such instruction. Several were obtained, however, from the German-American schools of Cincinnati; and the first year, 450 German children received instruction in their native language. The following year, this study was introduced into two more schools, and the office of German Assistant Superintendent was created. In 1866, the organization of German classes was authorized in any school containing 100 German-speaking pupils who requested it, and its introduction in the study of object lessons only, was directed in all schools of the lowest grade. This action met with considerable opposition on the ground that the homogeneity of feelings and interests between German residents and natives required that the children of the former should have the whole time during the first year in school to become familiar with English. It was pointed out, on the other hand, that the absence of the study of German was having the effect of keeping German children out of the schools. Whatever the cogency of these opposite views may have been, the study of German spread rapidly till, in 1870, the number of pupils receiving instruction in it was more than 6,000. About this time, also, the study of German and geography was made optional with the pupil in the highest grade of the district school, and American pupils were permitted to commence the study of German in any grade. This led to an increase in the number of American pupils studying German, the number, in 1872, being, 1,356. The German language is now taught in every school in the city except the colored schools. Difficulties have, from time to time, arisen from the introduction of this study, the first being in regard to the comparative grades of German and English classes; but this was met by a rule of the board which required that pupils studying German should belong, in this branch of instruction, to the same grade as in their English studies. The system of parallel grading thus adopted, supplemented by improvements looking steadily towards a practical rather than a theoretical knowledge of the language, has produced an increased interest in the study, till, in 1875, this department contained over 17,000 pupils, one-third of whom were Americans, taught by 73 teachers. — Another improvement, due to the foresight and energy of Mr. Divoll, is the Public School Library, which was founded in 1865. Beginning at that time with a miscellaneous collection of 453 volumes, it numbered 36,507 volumes, in 1874, with an annual membership of 5,477. The establishment of a kindergarten in connection with the public schools, was decided upon between the years 1872 and 1873. The experiment was made at the Des Peres School, and proving successful, was soon repeated in two others. Two difficulties were at once encountered: the apathy towards the schools of the poorer classes, for whose benefit they were established, and the comparative costliness of this kind of school. The first difficulty was soon overcome; the second remains, as it always will, a stumbling-block to those who consider the mere question of expense in dollars and cents, and take no account of the kind of instruction imparted, as compared with that furnished at a cheaper rate. The advantages derived from the kindergarten, as stated in the published reports, are a readier submission to school discipline, an increase of average intelligence, and a special aptitude for arithmetic, drawing, natural science, and language—the last shown in a quicker comprehension and greater ability to express ideas.—The first superintendent of schools was John W. Tice (1854—7); the next was Ira Divoll (1857—68); his successor was William T. Harris, the present incumbent, who was appointed in 1868.

School System.— The entire control and management of the public schools is committed to *The Board of President and Directors of the St. Louis Public Schools.* This board consists of 26 members—two from each ward—who are elected for 3 years, one-third going out of office each year. A *superintendent of public schools* is elected annually by the board, whose duty it is to exercise a general supervision over the public schools of the city, visiting and examining them for this purpose, and reporting upon their condition quarterly, or whenever required by the board. He appoints two assistant superintendents, one of whom must be able to speak German. The school revenue is derived from a state school fund, rent of lands given by the general government, a four or five mill tax (the amount varying from year to year) on each dollar of the city property, and fines in criminal cases. The two sexes are educated together. All religious or sectarian instruction is prohibited. The length of the school year is 40 weeks; the school age is from 6 to 16 years. The school system comprises three grades of schools—the district, the normal, and the high school, the former composed of a primary, an intermediate, and a grammar department, all in the same building. Owing to the overcrowding of the schools, in 1866 and subsequently, a system of half-time sessions was begun in the first year of the primary school in some districts, and is still on trial. By this arrangement, in crowded districts, a slight addition to the teaching force is all that is needed to supply the necessary instruction, one set of pupils coming in the morning, and another in the afternoon. As its action is to diminish the school hours of the smallest children only, it is thought to be beneficial. The *course of study* in the district school comprises reading, spelling, writing, drawing, vocal music, descriptive and physical geography, mental and written arithmetic, English grammar, history and constitution of the United States, composition, and outlines of physics and natural history. In the high school, the course of study is a general and classical one of 4 years; in the normal school the course covers a period of 2 years, the branches pursued being principally advanced stages of the district-school studies, with the addition of Latin, elocution, human anatomy and physiology, algebra, general history, geometry, mental philosophy, English literature, practical instruction in the teaching of all of these, and general instruction in the theory and art of teaching. In the evening schools, and the O'Fallon Polytechnic Institute, which serves as a high school for them, the course of study inclines toward elementary English branches and technological instruction. The session of the evening schools is 4 months. The rapid growth of these schools—the increase being from 1,149, in 1861, to 5,751, in 1875—is attributed to their intimate relation to the Public School Library, a year's membership in which is granted to each student who attends an evening school punctually 60 evenings of the course, and maintains a satisfactory standing therein. The certificate of such membership is equivalent to one-third payment of the cost of life membership. Certificates of the former kind are thus obtained annually by more than 1,000 students.

The number of schools in the city is as follows: district schools, 44; high schools and branches, 6; normal school, 1; evening schools, 24; colored schools, 6; kindergartens, 12; total, 93. The principal items of *school statistics* for 1875 are as follows:

Number of children of school age		95,539
" " " enrolled		41,692
Average daily attendance		24,438
Number of teachers, males	60	
females	594	
Total		654
Receipts (1875)		$849,513.24
Expenditures (1875)		$815,413.89
Total value of school property		$2,386,620.44

There are about 70 denominational schools in St. Louis under the control of the Roman Catholic and other churches, and a number of private schools and academies. In addition to the institutions for special and higher instruction mentioned under the head of Missouri (q. v.), there is the Concordia College and Theological Seminary, founded in 1839, and controlled by the German Evangelical Lutherans; the Academy of Science, established in 1856, and now possessed of a library of 3,000 volumes and a large museum; the Missouri Historical Society, founded in 1865; and three public libraries, special and general, with an aggregate of nearly 80,000 volumes.

SAINT LOUIS UNIVERSITY, in St. Louis, Mo., a Roman Catholic institution, conducted by members of the Society of Jesus, was founded in 1829, and chartered in 1832. It is supported by the fees of students, the charge for tuition, board, etc., being $280 a year, and for tuition alone, from $40 to $60. It has a classical course of 6 years, corresponding to the preparatory and collegiate departments of most colleges, and a commercial course of 4 years, embracing all the branches of a good English education. There is also a preparatory or elementary class. The library belonging to the institution numbers over 16,500 volumes. The select libraries, open to the students, form a separate collection of over 8,000 volumes. In 1875—6, there were 22 instructors and 353 students. The presidents of the university have been as follows: the Rev. P. J. Verhaegen, S. J., 1829—36; the Rev. J. A. Elet, S. J., 1836—40; the Rev. J. Vandevelde, S. J., 1840—43; the Rev. G. A. Carrell, S. J., 1843—7; the Rev. J. B. Druyts, S. J., 1847—54; the Rev. J. S. Verdin, S. J., 1854—9; the Rev. F. Coosemans, S. J., 1859—62; the Rev. T. O'Neil, S. J., 1862—8; the Rev. F. H. Stuntebeck, S. J., 1868—71; the Rev. J. Zealand, S. J., 1871—4; the Rev. L. Bushart, S. J., since 1874.

SAINT MARY'S COLLEGE, a Roman Catholic institution in San Francisco, Cal., conducted by the Christian Brothers, was founded in 1863. It is supported by the fees of students, the regular charge for board, tuition, etc., per term of five months being $125. It has a preparatory, a commercial, and a collegiate department, the last with a classical and a scientific course. The library contains 3,000 volumes. The number of students, in 1876, was 320. Bro. Justin is (1876) the president.

ST. MARY'S COLLEGE, at St. Mary's, Marion Co., Ky., a Roman Catholic institution, conducted by ecclesiastics of the Congregation of the Resurrection of Our Lord, was founded in 1821. It is supported by the fees of pupils. The regular charge for board, tuition, etc., is $200 a year; for tuition alone $40. It has a preparatory, a commercial, and a collegiate course. In 1875—6, there were 8 instructors and 103 students. The Rev. D. Fennessy, C. R. is (1876) the president.

SAINT MEINRAD'S COLLEGE, at St. Meinrad, Spencer Co., Ind., founded in 1854, is connected with St. Meinrad's Abbey, and is under the control of the Benedictine Fathers of the Roman Catholic Church. It is supported by the fees of students, amounting to $90 per session of five months for board and tuition. It is the seminary of the Roman Catholic Diocese of Vincennes, in which the priests of that diocese are educated, and offers a full course of English, commercial, classical, and theological studies. The library contains 6,000 volumes. The number of students, in 1876, was 80. The abbot, or superior, of the monastery is the principal of the college; he appoints one of the Fathers to act as president, or prefect of studies and morals. The present prefect (1876) is the Rev. G. Isidore Hobi, O. S. B., appointed in 1871.

SAINT STEPHEN'S COLLEGE, at Annandale, Dutchess Co., N.Y., was founded in 1860. It is an academic body composed of religious men — trustees, professors, and students — who are communicants of the Protestant Episcopal Church. The religious culture of the students is a prominent object. Its special design is the classical education of candidates for the ministry of the Church. It is chiefly supported by the contributions of friends. The only charge to students is $225 per year for board, etc. The college has valuable philosophical apparatus, and a library of 2,000 volumes. In 1875—6, there were 8 instructors and 74 students (45 collegiate and 29 preparatory). The presidents have been as follows: the Rev. Geo. F. Seymour, D. D., 1860—61; the Rev. Thos. Richey, D. D., 1861—3; and (1876) the Rev. Robert B. Fairbairn, D. D., LL. D., since 1863.

SAINT VINCENT'S COLLEGE, at Cape Girardeau, Mo., a Roman Catholic institution conducted by the Priests of the Congregation of the Mission, was chartered in 1843. It has a theological and a collegiate department. The curriculum of studies in the collegiate department covers five years, and embraces a complete course of English and classical literature. German, French, Italian, Spanish, and instrumental music are optional. Christian doctrine is taught throughout the course. The library contains 5,500 volumes. The regular charge for tuition, board, etc., is $250 a year; for tuition alone, $40. In 1875—6, there were 12 instructors, and 125 students (10 theological). The Rev. J. W. Hickey, C. M., is (1876) the president.

SAINT VINCENT'S COLLEGE, at Beatty, Westmoreland Co., Pa., 2 miles from Latrobe, is a Roman Catholic institution, founded in 1846 by the Rt. Rev. Boniface Wimmer, O. S. B., of St. Vincent's Abbey, and incorporated in 1870. It is conducted by the Benedictine Fathers, under the immediate supervision of its founder. There are four distinct courses of study: the theological, the philosophical, the classical, and the commercial, besides an elementary school for beginners. In all these, special attention is paid to religious instruction. The German, French, Italian, and Spanish languages are optional. The regular charge for tuition, board, etc., is $90 per session of five months. In 1875—6, there were 37 instructors and 306 students (ecclesiastical course, 38; philosophical, 30; classical, 152; commercial, 64; elementary, 22). The Rev. Hilary Pfrængle, O. S. B., is (1876) the director of the college.

SAINT XAVIER COLLEGE, in Cincinnati, Ohio, was established in 1831, by the Rt. Rev. E. D. Fenwick, D. D., the first Roman Catholic Bishop of Cincinnati, under the name of The Athenæum. In 1840, it was transferred to the Fathers of the Society of Jesus, who have conducted it ever since under its present title. It was incorporated in 1842. The college library numbers about 12,000 volumes. There are, also, select libraries for the use of the students. The course of instruction embraces four departments: the collegiate, academic, commercial, and preparatory. The regular tuition fee is $60 a year. In 1875—6, there were 14 instructors and 262 students (54 collegiate, 101 academic, 90 commercial, and 17 preparatory). The presidents, since 1840, have been as follows: John Elet, 7 years; Jno. De Blieck, 3; Isidore Boudreaux, 3; John Blox, 1; George A. Carrel, 2; Maurice Oakley, 5; Jno. Schultz, 4; Walter H. Hill, 3; Thos. O'Neil, 2; Leopold Bushart, 3; and the Rev. Edward A. Higgins, S. J., the present incumbent (1876), since 1874.

SALADO COLLEGE, at Salado, Bell Co., Tex., was founded in 1859 by a joint stock association. It is not denominational. It is supported by tuition fees, which range from $10 to $25 per session of five months for the regular branches. It admits both sexes, and has a preparatory and a collegiate department. In 1874—5, there were 5 instructors and 204 students (112 males and 92 females). The presidents of the college have been as follows: James L. Smith, to 1874; Samuel D. Sanders, 1874—6; and O. H. McOmber, A. M., since June 1876.

SALZMANN, Christian Gotthilf, one of the most distinguished educators of Germany, was born June 1., 1744, at Sömmerda, and died Oct. 31., 1811. Having studied theology, he became pastor, in 1768, of a Lutheran church at Rohrborn, near Erfurt; and, in 1772, of one of the churches in the city of Erfurt. The writings of Rousseau and Basedow made a strong impression on his mind; and, in 1781, he resigned his pastorate, in order to connect himself with the Philanthropin (q. v.). In consequence of the dissensions and confusion which arose in the Philanthropin, he left it in 1784, and established, at a villa purchased by him at Schnepfenthal, near Gotha, a new educational institution, for the sons of persons belonging to the higher classes of society. The literary reputation which Salzmann had already acquired by the publication of several pedagogical works, the efficient co-operation of an excellent wife and of several eminent educators, as Gutsmuths (q. v.), Lenz, Weissenborn, and the three brothers Ausfeld, soon made this institution one of the most famous in all Germany, and attracted pupils from all parts of Europe. In course of time, his son, Karl Salzmann, and several of his daughters and sons-in-law took an active part in the management of the institution, which thus, to a degree rarely equaled in the history of education, possessed the character of an enlarged family circle. After Salzmann's death, his son Karl assumed the direction of the school; and, in 1848, he was succeeded by Wilhelm Ausfeld, a grandson of the founder. A collection of the educational and juvenile works of Salzmann, which are highly esteemed, has been published at Stuttgart, in 12 vols. (1845—6). Salzmann was by far the most successful among the Philanthropinists, being especially distinguished for common sense, moderation, and perseverance. The school established by him, is the only one among the original Philanthropinic institutions which has survived to the present day. His first pupil at Schnepfenthal was Karl Ritter, the founder of comparative geography, who always gratefully remembered the indelible impressions which he had received from Gutsmuths, his teacher in geography.

SANDWICH ISLANDS. See HAWAIIAN ISLANDS.

SAN FRANCISCO, the metropolis of the state of California, and the largest city on the Pacific coast, having a population, in 1870, of 149,473, estimated, in 1875, at 234,000.

Educational History.—The first systematic instruction given in San Francisco was that at the mission Dolores, which was founded by the Franciscan Brothers, in Oct., 1776. This instruction, however, was chiefly religious, and was given to a favored few. The first English school in the city was opened in April, 1847, in a small shanty erected on the Plaza. It was a private institution, and was supported by tuition fees and voluntary contributions. Nearly all the children in the city (20 or 30 in number) received instruction there. This school was continued but a few months, however; and, in the autumn of the same year, the citizens organized a public school. This was opened in a small, one-story building, which was used for various purposes till 1848, when the discovery of gold in the state caused its abandonment as a school-house; and in 1850, it was demolished. On the 23d of April, 1849, Rev. Albert Williams opened a small select school in his church, which he taught for a few months. This was followed by the school of J. C. Pelton, who conducted it as a private enterprise from October, 1849, to April, 1850, when it was made a public school by an act of the common council. This school opened with only 3 pupils, but the number increased rapidly till 1850, when the disastrous fires of that and the following year broke up the school. The Happy Valley school, situated near the corner of Second and Minna streets, was opened in July, 1850. This soon became a flourishing school of about 100 pupils, but the great fires of 1851 caused its suspension. It was supported by tuition fees and voluntary contributions; but, as it received a small appropriation from the common council, the children of the poor received free instruction there. Another school of the same kind, *i. e.*, partly private and partly public, was established in Spring Valley, in 1851. This is now the Spring Valley Primary School. A few other small schools were taught during 1850 and 1851, and several large Catholic parochial schools were also established.—The first extended provision for a system of free schools was made September 25., 1851, when the common council passed an ordinance authorizing the organization, support, and regulation of common schools. Under this ordinance, Thomas J. Nevins was appointed superintendent, and James Denman the first teacher. The first board of education was elected in October following; and, at the end of the school year in November, 1852, seven schools had been established, with an attendance of 791 pupils. At that time, the number of children in the city between the ages of 4 and 18, was 2,050; and the average number attending the schools was 445. In 1853, the amount expended for the support of the schools was $35,040, the average number of pupils being 1,182. The first high school was opened August 16., 1856, with 80 pupils—35 boys and 45 girls. The usual opposition to this school, on the ground that the people's money should be spent for elementary instruction only, was at once encountered, but rapidly passed away upon an exhibition of the substantial benefits conferred by the school. In June, 1864, this school was divided into a boys' and a girls' school, in separate buildings. During the same year, the city was divided into 7 grammar-school districts; and the classes in each were placed under the supervision of a grammar master, for the purpose of securing greater uniformity and efficiency in classification and instruction. In 1867, a normal training class for teachers was organized; but, for want of appreciation by the board of education, it was discontinued. In 1868, graded evening schools were established. In 1872—3, instruction in French and German was introduced into nearly all the public schools, the study of one or the other language, in some cases, and in others, of both, being compulsory; but, in February, 1874, the study of any language but English was prohibited, except in the Girls' and the Boys' High School. In July of the latter year, the study of French and German was again introduced into four primary and four grammar schools. A Chinese school was organized in 1859, but was never popular with the class it was intended to benefit. In 1860, it was converted into an evening school, and as such was continued till 1871, when it was suspended. Two colored schools were established—one in 1854, the other in 1871; but, in 1875, all colored schools were abolished, and their pupils were transferred to the other schools of the city. Evening schools, on the contrary, have steadily grown in public favor, till they are now regarded as "the most useful and prosperous schools in the city." The city superintendents have been as follows: T. J. Nevins, 1852—4; W. H. O'Grady, 1854—6; E. A. Theller, 1856—7; J. C. Pelton, 1857—8; H. B. Janes, 1858—60; J. Denman, 1860—62; G. Tait, 1862—6; J. C. Pelton, 1866—8; J. Denman, 1868—70; J. H. Widber, 1870—73; J. Denman, 1873—5; and H. N. Bolander, the present incumbent, who was elected in 1875.

School System.—The city constitutes but one school-district, parents being permitted to send their children to any school they may choose. The management of the schools is intrusted to a *board of education* composed of 12 members, elected, at large, biennially, by direct vote of the people. This board has all the powers usually conferred upon such bodies. The *superintendent of common schools* is, also, elected biennially by the people, and may appoint an assistant. The support of the schools is derived from state and city taxes, the latter being fixed by law at an amount equal to $7 for each actual attendant. The school age is from 5 to 17 years. There are 33 primary, 13 grammar, and 2 high schools, and one evening school. The system contemplates a course of 4 years in the primary schools, 4 in the grammar, and 3 in the high schools, pupils continuing one year in each grade. The course of study in the high schools is such as to prepare students for the state university. In the grammar and the primary schools, it does not differ materially from that of other large cities; and includes industrial drawing, vocal music, French, and German. To the two latter, where taught, 1½ hours a day for each class are given, 30 special teachers being employed for the purpose.

The principal items of *school statistics*, for 1875, are as follows:

Number of children of school age		37,583
" " " enrolled in public schools		31,128
Average daily attendance		21,014
Number of teachers, males	63	
females	447	
Total		510
Receipts		$757,849.75
Expenditures		$707,445.36

The number of private schools and colleges in 1875, was about 100, about one-fifth of which are managed by the Roman Catholics, and a considerable part of the remainder, by other denominations. In size and character, they range from the small family school of a few pupils, to the flourishing college which numbers its students by hundreds. The number of pupils attending such institutions, in 1875, was reported at a little over 6000. Among the agencies for higher education, the city contains an academy of sciences. For an enumeration of the institutions for superior and special instruction, see California.

SANTA BARBARA COLLEGE, at Santa Barbara, Cal., was incorporated in 1869. It is not denominational. Both sexes are admitted. It contains six departments: (1) mathematics, (2) languages, (3) literature and history, (4) natural science and physics, (5) art, (6) music. There are three courses of study: juvenile, preparatory, and academic; a collegiate course is also to be established. The regular charge for tuition, board, etc. ranges from $150 to $175 per term of five months; for tuition alone, from $5 to $10 a month. In 1874—5, there were 8 instructors and 120 students. Ellwood Cooper is (1876) the principal.

SANTA CLARA COLLEGE, at Santa Clara, Cal., a Roman Catholic institution under the superintendence of the Fathers of the Society of Jesus, was founded in 1851, and chartered in 1855. It is supported by the fees of students, the regular charge for tuition, board, etc., being $350 a year; for tuition alone, from $4 to $5 a month. The library contains over 10,000 volumes. The plan of instruction embraces two distinct courses, the classical and the scientific. There is, besides, a preparatory department. In 1875—6, there were 26 instructors and 257 students. The presidents have been as follows: Rev. John Nobili, 1851—6; Rev. Nicholas Congiato, 1856—8; Rev. Felix Cicaterri, 1858—61; Rev. Burchard Villiger, 1861—5; Rev. Aloysius Masnata, 1865—8; Rev. Aloysius Varsi, 1868—76; Rev. Aloysius Brunengo, since 1876.

SANTO DOMINGO (sometimes called *San Domingo*, or the *Dominican Republic*), a republic in the West Indies, occupying the eastern and larger portion of the island of Hayti (q. v.). It has an area of 20,600 sq. m.; and a population of about 175,000. The greater part of the population are a mixed race of Spaniards, Indians, and negroes. They speak the Spanish language, and belong to the Roman Catholic Church.—Public instruction can scarcely be said to exist. Spain, to which Santo Domingo formerly belonged, never cared for the education of the natives; and nearly all the priests, physicians, officers, and teachers came from the mother country. At present, there is freedom of instruction; but, with the exception of a few private schools in the cities, which charge exorbitant fees, there are no elementary schools, and, consequently, the wealthy classes still continue to send their children to Europe to be educated. In 1860, there was but one public primary school in the entire northern and eastern part of the republic; and but little, if any, improvement has been made since that time. Special branches of study, like law, medicine, pharmacy, and architecture, are taught exclusively by private teachers.

SARMIENTO, Domingo Faustino, a South-American statesman, born February 15., 1811, in San Juan de la Frontera, now a western province of the Argentine Republic. He became director of a school in the province of San Luis as early as 1826, but removed to Chili in 1831. In 1836, he left Chili, and opened a female school in San Juan, but returned to Chili a few years after, where he devoted himself to the cause of education, by establishing schools and colleges, publishing school books, and editing educational journals. The establishment of the normal school at Santiago was one of the results of his labors at this time. In 1845, at the request of the Chilian government, he visited Europe and the United States for the purpose of observing the primary-school systems of those countries. Subsequently, he again took up his residence in the Argentine Republic, and was made, successively, minister of the interior, colonel in the Argentine army, governor of San Juan, and minister of public instruction of the republic. From 1864 to 1868, he was minister plenipotentiary to the United States from that country; and, in October of the latter year, was inaugurated president of the Argentine Republic, which office he continued to hold six years. In this position, his efforts, always directed towards the development of the resources of his country, and the improvement of her people, were remarkably successful. The introduction and extension of railroad and telegraph facilities, the encouragement of immigration and foreign commerce, and the establishment of schools and colleges, were the principal events of his administration. The foundation of the national observatory at Cordoba, under the supervision of Prof. B. A. Gould, an institution which has already rendered important service, is chiefly due to President Sarmiento. His principal educational works are the following: *De la Educacion popular*, and *Las escuelas*, the latter published in New York.

SAXONY. See Germany.

SCHMIDT, Karl, a German educator, was born July 7., 1819, and died Nov. 8., 1864. After studying theology and philosophy at the universities of Halle and Berlin, he was appointed, in 1846, teacher at the gymnasium of Köthen. In 1863, he was appointed director of the teachers' seminary and school councilor at Gotha, and in the latter position was called upon to re-organize the school system of the duchy. He wrote a large number of educational works, some of which are regarded as belonging to the best part of German literature. The most important of his works is a general history of pedagogics (*Geschichte der Pädagogik*, 1862, 4 vols.; 3d ed., revised by Wichard Lange, 1872—5, 4 vols.). Among his other works are: *Geschichte der Erziehung und des Unterrichts* (1860); *Das Buch der Erziehung* (1854); *Gymnasialpädagogik* (1857); *Zur Reform der Lehrerseminare und der Volksschule* (1863); *Zur Erziehung und Religion* (1865); *Anthropologie* (1865). Schmidt regarded the whole of anthropology, not psychology alone, as the only safe and adequate foundation of pedagogy. He accepted the theories of Gall (q. v.) and his successors, and himself made notable contributions to the development of phrenology.

SCHOLASTICISM, a name generally applied to the Christian philosophy of the middle ages, though there is no agreement among scholars as to its exact definition. In its first period, which extends from the 9th to the 11th century, philosophical speculations were limited to theological problems. Among the greatest representatives of scholasticism are Scotus Erigena, Gerbert (Pope Sylvester II.), and Anselm of Canterbury. About the middle of the 12th century, the controversy between the Realists and Nominalists led to the full development of scholasticism, which denied to philosophy any right to extend its speculations beyond the tenets of the Church, but assigned to it the task of systematizing the doctrines of the Church, and of defending them (*philosophia theologiæ ancilla*). Thus, the scholastics were led to cultivate chiefly logic and dialectics. Among the greatest scholastics, during the classic period of the system, were Alexander de Hales, Albertus Magnus, Thomas Aquinas, and Duns Scotus. In the 15th century, scholasticism began to decline; and, though subsequently the Jesuits tried to revive it, and have partly retained its method of teaching to the present day, it has never been able to recover anywhere its mediæval supremacy. Its importance in the history of education depends chiefly on the influence which it exerted, during the middle ages, upon all schools, but more especially upon the cathedral and convent schools. Among the best works on the history of scholasticism, are HAURÉAU, *De la philosophie scolastique* (2 vols., 1850); KAULICH, *Geschichte der scholastischen Philosophie* (1853); STŒCK, *Geschichte der Philosophie des Mittelalters* (3 vols., 1864—6); HALLAM, *Introduction to the Literature of Europe*.

SCHOOL (Lat. *schola*, from Gr. *σχολή*, leisure, especially for literary studies, and hence applied to the place where such studies were pursued,—a school), a term now applied to an educational establishment, particularly of the primary or secondary grade; as a primary school, a grammar school, a high school, a classical school, etc. Schools of the secondary grade are, however, often designated *academies*, *seminaries*, etc. The term *school* is not applied to an institution of learning of the superior grade, but institutions for scientific or professional instruction are usually called *schools;* as theological schools, medical schools, law schools, polytechnic schools, art schools, etc. For information in regard to each kind of schools, see under the respective titles.

SCHOOL AGE, or **Scholastic Age**, the age fixed by law, during which pupils may attend the public schools. This varies considerably in different countries, both as to its commencement and termination. Thus, in Prussia, the school age is from 5 to 14 years; in France, from 7 to 13; in Switzerland, from 6 to 13; and in England, from 3 to 18. In the latter country, the rule is as follows: "Attendances may not be reckoned for any scholar above 18, or in a day school, under 3, or, in an evening school, under 12 years of age." The legislation on this subject in the different states of the American Union, also presents considerable diversity, as is shown by the following table:

State	School age	State	School age
Alabama.........	7—21	Mississippi.........	5—21
Arkansas.........	6—21	Missouri.........	5—21
California.........	5—17	Nebraska.........	5—21
Colorado.........	5—21	Nevada.........	6—18
Connecticut.........	4—16	New Hampshire...	5—15
Delaware.........	5—21	New Jersey.........	5—18
Florida.........	6—21	New York.........	6—21
Georgia.........	6—18	North Carolina....	6—21
Illinois.........	6—21	Ohio.........	6—21
Indiana.........	6—21	Oregon.........	4—20
Iowa.........	5—21	Pennsylvania.....	6—21
Kansas.........	5—21	Rhode Island......	4—16
Kentucky.........	6—20	South Carolina ...	6—16
Louisiana.........	6—21	Tennessee.........	6—18
Maine.........	4—21	Texas.........	6—18
Maryland.........	5—20	Vermont.........	5—20
Massachusetts....	5—15	Virginia.........	5—21
Michigan.........	5—20	West Virginia.....	6—21
Minnesota.........	5—21	Wisconsin.........	4—20

It will thus be seen that the school age begins at 4 years in five states; at 5 years, in seventeen states; at 6 years, in fifteen states; and at 7 years, in only one state; also, that the school age ends at 21 in twenty-two states; at 20 in six states; at 18, in five states; at 17, in one state; at 16, in three states; and at 15, in two states—Massachusetts and New Hampshire.

The statistics showing the age of the children who actually attend school, is very meager, but few of the state school reports giving any information on the subject. It has been estimated that the vast majority of children leave school before the age of 15 years. The average age of pupils in the evening schools must, however, be much higher. In the rural districts, the average age of pupils in the public schools must be higher than in the large cities, especially in the winter term. After a comparison of all available statistics, Francis Adams, in *Free School System of the United States*, remarks, "There can be no doubt, however, that, as a general rule, children remain at school much later in America [United States] than in England." It is also stated by the same writer that, "in England and Wales, the percentage of children over 14, in schools receiving grants, in 1874, was 0.99." The age fixed by most compulsory attendance laws, is from 8 to 14 years.

SCHOOL BOARD, the name generally given to the body of school commissioners, directors, trustees, etc. constituted by law to have the care and regulation of schools in states, cities, towns, districts, etc. Such a board is often called the *Board of Education*, or *Board of Public Instruction*. In most of the New England states, the school board is called the *School Committee*. Formerly, in New England, the usual term was *Prudential Committee*, which title is still retained in some places. State boards of education usually have a paramount authority in all educational matters in the state. In England, *School Board* is the name given by the "Elementary Education Act" of 1870, to the constituted school authority in each district, subject to the Education Department of the government.

SCHOOL BROTHERS. See ROMAN CATHOLIC CHURCH.

SCHOOL CENSUS, in its wider sense, is an official census relating to school affairs, and embraces the number of schools, teachers and pupils, children of school age, school libraries, etc. The great progress of statistical science, in late years, has led, in different countries, to much more minute inquiries into school affairs, and is preparing the way for a much fuller and more comprehensive school census than has been accessible in the past. Heretofore, a school census has commonly been understood in a narrower sense to denote an enumeration of all the children of school age residing in any country, state, city, etc. This enumeration has always formed a part of the general decennial census of the United States, and of the state enumerations. In some states, an enumeration of the children of school age is taken annually, as the appropriation of state aid for public schools is based upon it. Such a census is of great importance, as showing the number of children to be educated, in comparison with the school attendance. The following table shows the number of white and colored children between the ages of 5 and 19 in each of the states of the Union, according to the census of 1870:

School Census of the United States.

(WHITES.)

	5 to 9	10 to 14	15 to 17	18 to 19
Alabama	66,168	76,361	39,258	25 149
Arkansas	44,915	52,514	28,436	,263
California	60,189	49,523	21,074	12,902
Connecticut	52,130	54,133	30,350	19,963
Delaware	12,756	12,954	6,683	4,203
Florida	12,695	13,493	6,718	4,401
Georgia	79,678	91,489	47,192	29,800
Illinois	336,435	318,948	155,422	102,536
Indiana	226,346	220,420	112,641	72,179
Iowa	164,729	154,436	73,919	48,092
Kansas	44,642	39,404	18,886	12,8
Kentucky	152,687	147,302	75,779	46,306
Louisiana	45,010	48,276	24,932	15,003
Maine	65,185	69,874	39,972	26,536
Maryland	74,714	73,904	39,616	25,435
Massachusetts	138,706	147,149	82,810	57,826
Michigan	143,849	138,428	70,866	46,636
Minnesota	63,021	55,018	24,236	15,158
Mississippi	47,190	53,646	28,439	18,085
Missouri	222,593	210,479	102,476	64,780
Nebraska	15,143	13,049	6,110	4,216
Nevada	2,516	1,850	817	704
N. Hampshire	28,171	31,808	18,640	12,839
New Jersey	102,566	100,344	51,316	33,960
New York	478,673	478,639	261,050	167,502
North Carolina	83,531	92,349	47,757	30,684
Ohio	328,912	326,746	170,876	110,612
Oregon	12,348	11,352	5,358	2,947
Pennsylvania	425,529	415,580	217,670	143,561
Rhode Island	19,926	22,114	12,581	8,727
South Carolina	34,715	39,223	20,226	13,247
Tennessee	123,409	128,075	66,298	41,151
Texas	74,482	81,552	40,069	24,538
Vermont	34,369	34,854	20,385	13,202
Virginia	83,701	93,060	48,826	30,267
West Virginia	58,591	57,432	28,999	17,758
Wisconsin	145,522	139,610	67,948	42,214
Total	4,105,742	4,095,388	2,114,625	1,363,289

School Census of the United States.

(COLORED.)

Alabama	67,547	63,388	30,221	19,490
Arkansas	15,645	15,762	8,193	5,205
California	383	385	180	112
Connecticut	766	945	575	474
Delaware	2,960	2,918	1,536	1,031
Florida	13,442	12,010	5,538	3,945
Georgia	79,091	74,493	35,562	22,700
Illinois	3,044	3,187	1,722	1,294
Indiana	3,017	3,006	1,649	1,120
Iowa	625	614	353	305
Kansas	2,137	2,237	1,120	690
Kentucky	31,180	31,975	15,565	9,738
Louisiana	44,876	42,329	20,493	13,769
Maine	115	160	129	106
Maryland	22,274	22,574	11,371	7,432
Massachusetts	1,075	1,201	782	679
Michigan	1,579	1,485	768	530
Minnesota	62	66	39	57
Mississippi	62,152	59,099	28,308	18,203
Missouri	16,766	17,133	8,328	5,448
Nebraska	65	81	47	47
Nevada	18	15	5	9
New Hampshire	34	57	46	50
New Jersey	3,217	3,458	1,952	1,378
New York	4,556	4,984	2,972	2,300
North Carolina	54,775	54,489	26,581	17,687
Ohio	7,548	7,638	4,222	3,053
Oregon	33	34	12	12
Pennsylvania	6,271	6,960	4,020	3,092
Rhode Island	364	433	309	217
South Carolina	57,792	55,324	26,508	17,229
Tennessee	43,637	45,688	22,462	13,756
Texas	38,345	34,239	16,054	9,830
Vermont	67	92	62	74
Virginia	67,908	69,352	33,894	20,728
West Virginia	2,277	2,385	1,155	826
Wisconsin	211	208	142	112
Total	655,854	640,408	152,318	202,728

The school age, in some of the states, extends to 21 years; but, practically, the above table includes all the children who attend school.

In the countries of Europe, the school age (q. v.) generally extends only to the 14th, 13th, or 12th year of age. The following table exhibits the number of schools and pupils, and the proportion of the latter to the entire population, in the several countries of Europe:

COUNTRIES	Year	Number of public schools	Number of pupils	Number of pupils to every 1,000 inhabit.
Switzerland Primary Schools	1871-2	5,088	412,789	155
German Empire estimated, without Alsace and Lorraine)	1872	56,000	6,000,000	153
Luxemburg	1874	644	28,437	142
Norway	1873	6,502	243,969	138
Sweden	1875	8,123	606,876	138
Netherlands	1873	2,790	500,059	136
Denmark	1867	3,064	226,679	135
France	1872	70,179	4,720,000	131
Belgium	1872	5,678	618,937	123
Austria-Hungary	1870-72	31,069	3,285,485	91
Great Britain and Ireland	1871-4	22,578	2,848,295	88
Spain	1873	27,760	1,381,972	82
Italy	1873-4	42,920	1,827,381	70
Greece	1874	1,227	81,449	50
Finland	1873	1,382	76,477	42
Portugal	1870	3,500	140,000	32
Roumania	1873	2,221	82,145	17
Servia	1874	517	23,278	17
Russia	1873	23,183	1,009,037	14

SCHOOL-DISTRICT, a district formed by the division of a town, or township, for the purpose of establishing, managing, and supervising schools. It is usually the smallest territorial subdivision of a state. The oldest law, in the United States, establishing school-districts and the *district system*, was that passed in Massachusetts, in 1789. In most of the states, at the present time, the district system has been wholly or partly superseded by the township system, which has been found to have many advantages over it. In Massachusetts, the district system was, in the main, abolished in 1869; and the change is strongly commended. The system still exists to some extent in the western part of the state, eliciting the following comment from one of the state agents, in his report of December, 1875: "With little or nothing of consideration in its favor, with a troop of evils attendant upon it, with many peculiarly incident to its existence, it would seem that it should be abolished at once, and forever, by legislative enactment." In some of the other New England states, permissory laws have been passed, allowing the inhabitants to accept the township system instead of the district system. — Each school-district has a trustee, or a board of trustees, or, as styled in New England, a *school committee*, elected by the inhabitants, and authorized to have the safe-keeping of the school-house and other school property, to hire and pay the teacher, or teachers, and to make all necessary regulations for the management of the school. The mode of forming school-districts, and of changing their boundaries, varies in the different states.—The objections to the district system seem to be based upon the smallness of its area and its consequent inadequate resources to support suitable schools. "Little money, poor school-houses, short schools," said the state superintendent of Maine, in 1872, "are the necessary attendants of this system." This circumstance has led, in New York, to the establishment of *Union free-school districts*, formed by uniting two adjoining districts for the purpose of establishing and supporting a better school than the resources of either by itself would permit. In the English Education Act, the parish is constituted the school-district, in relation to which F. Adams remarks, in *The Free School System of the United States*, "it has been suggested that in selecting the parish as the school-district, we have selected too small a division. We have, however, happily steered clear of the system which, in the United States, has been very prejudicial to harmonious and efficient action."—For information in regard to school-districts in the several states, see under the respective titles.

SCHOOL ECONOMY, a general term applied to the collective body of principles and rules by which the keeping of schools is regulated. In its widest sense, it embraces all that pertains to the construction and furnishing of the school-house, the proper apparatus to be employed in carrying on the processes of instruction, the various modes of school organization and administration, including a consideration of the length and arrangement of school sessions and terms, the proper records to be kept, the course of study, programme of daily exercises, and the modes of discipline, management, and instruction. The treatment of all these various matters will be found in this work under the respective titles.

SCHOOL FESTIVALS, like the vacation and holidays, are an interruption of the regular school work; but while the latter only aim at a cessation from work in order to give to teachers and pupils time for rest and recreation, school festivals are intended to substitute enjoyment for mental labor. Ancient Rome had at the beginning of March, a school festival, called the *quinquatria*, at which the teachers collected presents. In order to give to this festival a Christian character, Pope Gregory IV. (827—44) appointed the 12th of March (the day on which the Church commemorated the death of Pope Gregory I.) as a special festival for the schools of Rome. The Gregorian festival spread throughout Italy, France, and Germany, and to other countries; and, in some places, has maintained itself to the present day. — Next to the day of St. Gregory, the festivals of the Apostle Andrew, of the Innocent Children, of St. Nicholas, and others, came early into general use. Among these, the *virgatum-gehen* may be mentioned. (See GERMANY.) Processions and masquerades were a common feature of all these festivals.—In Germany, as well as in the Scandinavian countries, there were also *May festivals*, to celebrate the departure of winter and the advent of spring. The pupils of the schools, in solemn procession, marched around the field, and, in the evening, were treated to a common banquet. This festival is still in common use in Bavaria and Würtemberg. The most celebrated among the school festivals in Germany, are the *Kirschenfest*, at Naumburg, and the *Ruthenfest*, at Ravensburg. The celebration of these usually draws a large concourse of people. Where the public schools have a denominational character, great church holidays are frequently the occasion for special school festivals. Thus, in many Protestant schools of Europe, it is common to celebrate annually the introduction of the Reformation. Monarchical governments have made the celebration of the birthday of the sovereign obligatory in all the schools of the country, in order to implant sentiments of loyalty and submissiveness in the minds of the rising generation. Some of the German educators who are favorable to school festivals, have, by way of experiment, organized them on the grandest scale. Thus Froebel spent, in 1850, several months in preparing a school children's and people's festival, which was held in a castle of the duke of Saxe-Meiningen. It is quite common for the elementary schools in Germany to spend at least one day of the year in an excursion, during which the children amuse themselves with the national games. To close the school year with appropriate festivals, is quite common in civilized countries. The best known among the school festivals of the United States are those connected with the college commencement. (See COMMENCEMENT.) Among schools of all grades, school exhibitions and receptions have become very popular, and rarely fail to be numerously attended by the relatives and friends of the pupils. School picnics are more frequently held during the summer vacation than in the midst of the school year; but, without regard to the season, are sure to delight the scholars.—Educators are generally agreed that school festivals, if well arranged and superintended, exert a beneficial influence.

SCHOOL FUND, property or money set apart by legislative enactment for the support of schools. In the United States, the school fund in each state has been chiefly derived from national and state appropriations, particularly of lands. Of the latter, the 16th section grant is an example. The *U. S. Deposit Fund,* sometimes called the *Surplus Revenue Fund,* was also a national grant. (See UNITED STATES.) The mode of apportionment varies in the different states; it is, however, wholly or partly based upon the number of pupils, in each town or district, of the legal school age. For an account of the amount of the school fund in each state, see under the respective titles.

SCHOOL FURNITURE. Under this head will be considered (1) desks and seats; (2) platform; (3) blackboard; and (4) miscellaneous furniture and apparatus.

Desks and Seats.—In the matter of health, these are, perhaps, the articles of the greatest importance in the school room. Notwithstanding their importance, however, as deciding the pupil's position for several hours of the day, and thus determining, in a great measure, his future health and bearing, school authorities are not yet entirely agreed as to their style, dimensions, or arrangement; each civilized country using its own, on account of some peculiar advantage, the relative value of which is determined by observation from its own stand-point. The first consideration, in the construction or arrangement of desks and seats, should have regard to their influence upon the health of the pupils; the second, to the convenience of the teacher and pupils, in the adjustability of the desk and seat for different exercises, or for purposes of school government, which last would be determined principally by the arrangement, and the means afforded for facilitating the entrance or exit of the pupils. Of the comparative advantages of different styles of desks or seats, it is not necessary here to speak, the subject being treated exhaustively in the works referred to at the end of this article. The books that have been written on this subject in different countries form almost a library of themselves. Perhaps the best form yet devised is that described in the report of M. Buisson, French commissioner to the Exposition at Vienna in 1873, which was selected for special commendation, after an examination of all the styles there presented. It is known as the Bapterosses desk and seat, from the name of the inventor, who designed it for use in his factory at Briare. It has recently been introduced into the normal school at Auteuil. The chair is single, the seat being of wood, round or square in shape, and supported by an iron leg which slides up or down in a sheath, or hollow cylinder, the base of which is firmly screwed to the floor. The leg and sheath together form the support of the seat, which is checked at any height, in its upward or downward motion, by a thumb-screw. The back of the chair is of the ordinary pattern, and is slightly inclined. The desk is stationary, and is supported by a cast-iron upright. Its upper surface is divided into two parts in the usual manner — a narrow horizontal part at the back, and a sloping part, much larger, and nearer the pupil. It is provided either with a lid which converts the desk into an ordinary box, or, if the top is not movable, with compartments which open laterally. A small leaden pipe, extending the whole length of the desk, under the horizontal part of the upper surface, serves as an inkstand. It is provided with a vent at each end, secured by a copper cap, and, opposite the pupil, is pierced to receive a small copper funnel of sufficient size to allow only the point of the pen to enter. By this arrangement, the pupil can neither dip his pen too deeply, so as to get too much ink, nor upset his inkstand. Near the foot of the leg of the desk is a foot-rest, which may be raised or lowered by the same device of slide and thumbscrew that is used for the seat. The thumbscrews used on the chair and desk are so arranged that they cannot be turned except by a key, which is kept by the teacher. The principal advantage of this desk is, that it can be adapted to pupils of different heights; its other recommendations are obvious. An improvement, perhaps, might be made by providing the desk with two supports instead of one, thus securing a firmness which desks supported by one central pillar do not usually have. The single desk should be 2 feet long, from 25 in. to 29 in. high, and 18 in. wide; the double desk should be 4 feet long, the other dimensions being the same as those of the single desk. The seats should be from 12 in. to 16 in. high. Recitation seats as well as desk seats should be provided with backs. It should not be forgotten, however, that no arrangement of desk or seat, however ingeniously adapted to the pupil's comfort, can take the place of that frequent change of position which is a necessity of his being. Of the dimensions of desks and seats, Robson says, after a careful comparison of the works of Zwey, Falk, Frey, Cohn, Kleiber, and Virchow, "The weight of opinion is to the effect that the height of the seat should correspond to the length of the scholar's leg, from the knee to the sole of the foot. There must be no stretching of muscles; therefore, the sole of the foot must rest on the floor or upon some flat surface. If the seat be too high, the swinging of the foot in the air causes a compression of the blood-vessels and nerves of the hinder part of the leg and knee; if it be too low, the thighs of the scholar are pressed against his stomach to the disadvantage of health. * * * In order to prevent the scholar's slipping forward, the seat should be slightly declined backward. The height of the desks should be so arranged, that the under part of the arm may rest comfortably on the desk-top, and that the powers of vision may not be strained, or, in other words, that the normal distance of vision may be preserved. Desks which are too low cause, by the bending of the scholar, a pressing on the chest and lower part of the body; while those which are too high cause the right shoulder to be so lifted, as to remove the upper part of the arm so far from the body, that the lower arm cannot be laid flat on the table, thereby causing the arm to be unsteady and easily tired." Much ingenuity has been exercised in devising seats capable of transformation into a variety of forms. The tendency in this respect is frequently towards a mechanism so complicated that it defeats its own object by becoming easily disarranged; and, even if this were not the case, many of the transformations will usually be found to be useless. The really desirable changes of form are very few. Says an eminent educator: "If seats could be so contrived as to remain firm when placed horizontally, to allow the pupil to lean forward easily to write upon his desk, and then could be made to have an inclination backward when the pupil desires to read or study, it would add much to his comfort in sitting, and something, perhaps, to the comeliness of his figure." Concerning the distance of the seat from the desk, a considerable difference of opinion exists, some teachers considering only one inch necessary, others as much as three. On this point Dr. Wiese says: "It is, therefore, desirable, that the inner edge of the desk should be distant from the front of the seat only about one inch." Robson says: "The scholar who sits too far from the desk, either bends too much, and thereby hurts his chest and eyes, or he glides too far forward on his seat, and so gets an unsteady position. * * * It is recommended that the vertical distance from the desk to the seat-top should be the length of the fore-arm, or one-sixth the size [height] of the body of the scholar. Too great a distance encourages crooked growth; for the scholar, while writing, has his body weighing on one arm, instead of having the arm naturally resting on his body. If the difference in height between desk and seat be too slight, then the chest sinks, and the back is bent out so as to encourage stooping." Of the *arrangement* of desks, many methods have been advocated, and different ones prevail in different countries; but the weight of authority seems to be in favor of seating the pupils in pairs, this method being economical as to space, and more advantageous for both teacher and pupil in the efficient carrying out of the daily exercises. Its superiority, also, in the matter of ingress and egress of the pupils is manifest. The arrangement of desks in regard to space and light has been considered in the article HYGIENE, SCHOOL. Many other considerations present themselves in this connection, the chief of which are the following: the form and height of the back of the seat; its attachment to, or independence of, the desk immediately behind it; the variation in the height of seats and desks as arranged on the same level for pupils of different sizes; the slope of the floor, or its construction in steps, for the same purpose; the movable desk or seat as compared with the stationary; the mounting of desks and seats on casters; the varying slope of the desk-top for different purposes; the space between the desks; the breadth of aisles, etc. These are all considered, however, in works specially written for the purpose; and the merits of each for different purposes are fully set forth.

The Platform.—This is now considered highly desirable, if not indispensable, in the school room. On all public occasions, whether of examination or exhibition, it is indispensable; while there are many occasions in the usual routine of the school, when it is exceedingly useful. It should be not less than 6 feet wide, and 15 inches high, and should be divided into two levels or risers. In schools in which all the exercises are conducted in one room, closets for the storing of school apparatus are often placed at each end of the platform. Recitation rooms are usually fitted up without platforms, the teacher's desk standing on the floor.

The Blackboard.—At the back of the platform, against the wall, and facing the school or class, is placed the blackboard. It should extend the entire length of the platform, should be at least 4 feet wide, and extend to within 3 feet of the floor. It should be provided with a frame all around, and a trough at the lower edge for the chalk, and to catch dust, and should have hooks, on which pointers may be hung. The material of blackboards is of three kinds: wood, slate, and a kind of slate-surface made to lay directly on the wall. The last, by combining in a medium the best qualities of the two others, is the most desirable. (See BLACKBOARD.)

Miscellaneous Furniture and Apparatus.—The principal consideration under this head is not so much the comparative values of different articles, but what articles are indispensable or, at least, highly necessary. Among these, may be mentioned a clock, a small bell for the calling and dismissing of classes, chairs for visitors, closets or wardrobes, provided with wrought-iron hooks and pegs, a thermometer, sets of maps and charts, a terrestrial globe, an abacus, or numeral frame, and a collection of miscellaneous articles to be used in giving object lessons. The extent to which the articles desirable for the school room have been added to, and perfected, both in the United States and on the continent of Europe, is remarkable; the list given above, however, furnishes a tolerably complete outfit for a primary school. One consideration remains to be insisted on; namely, the exercise of good taste in the selection of furniture and articles intended to be in constant sight of the pupils. On this subject, the architect of the London School Board remarks: "The furniture of the school room should be graceful in form, and good in quality and finish. Children are particularly susceptible of surrounding influences, and their daily familiarization with beauty of form or color, in the simplest and most ordinary objects, cannot fail to assist in fostering the seeds of taste, just as daily discipline tends to promote habits of order. Furniture finished like good cabinet work is more likely to be respected, even by the mischievous school boy, than that of an unsightly or rough character." For further information on this subject see ROBSON, *School Architecture* (London, 1874); WICKERSHAM, *School Economy* (Phila., 1868); CURRIE, *Common-School Education* (Edinburgh, 1857); BUISSON, *Rapport sur l'instruction primaire à l'exposition universelle de Vienne en* 1873 (Paris, 1875).

SCHOOL GROUNDS. See HYGIENE, SCHOOL.

SCHOOL-HOUSE.—Of the first importance in any system of public instruction, is *school architecture*, including every thing that relates to the building in which the instruction is to be imparted. All matters that concern the health of the school; namely, the situation of the school-house, its furniture, the temperature of the rooms, and the means for warming, lighting, and ventilating them, are considered either in separate articles in this work, or under the head of *Hygiene, School*. It is designed here specially to treat of (I) the construction of the school-house, and (II) its internal arrangement.

I. *Construction of the School-House.*—What material should be used in the construction of a school building depends entirely upon its location and the means at command. Owing to the improved modern methods of building, wood, brick, or stone may be used indifferently, as far as healthfulness is concerned, economic considerations alone deciding which is to be employed. It may be said, in general, that these considerations point to the use of stone or brick in cities and towns, and of wood, in the rural districts, except in old and thickly-settled countries where wood is scarce. The increased attention bestowed upon the appearance of the school-house at the present time is one of the most encouraging proofs of the general and permanent interest aroused in the welfare of schools, since purely esthetic considerations are generally the last to make themselves felt. The rudeness of the district-school building is proverbial; yet, the expression of the cherished memories that cluster around it, forms a part of the choicest literature of every civilized country. If the transfiguring power of early association, therefore, renders it an object of affection through life, in spite of its uncouthness, how much stronger would that affection be if the matured taste of later years confirmed the preference of childhood! Not only the testimony of eminent writers, but the unwritten experience of every observing person, bears abundant witness to the subtle and enduring influence of early associations; and now, when the subject of education is receiving so large a share of careful thought, with a view to discover all available ways to perfect its means and methods, it would seem that this powerful agent should not be neglected. Without squandering money, therefore, to make the school-house pretentious, or a perfect specimen of one of the conventional orders of architecture, pains should be taken that it should not be an offense to the eye, or out of harmony with the landscape. Since this can generally be done, also, without any, or with only slight, additional cost, the educational value, moral and esthetic, of the appearance of the school-house, may properly be included in the plans of the architect. As to the solidity of the school building in all its parts, it is not too much to say that no financial objections which would impair this, should, for a moment, be entertained. The contingencies which may happen at any moment where large numbers of children are gathered together, are so momentous in their character, as to render this imperative. The size of the school-house should be determined, of course, by the number of pupils it is intended to accommodate. An eminent authority says that, a building designed for an ungraded school to be taught by a single teacher, should contain, at least, 900 sq. ft. of floor-space; being intended to accommodate from 50 to 80 pupils. In regard to the proper size of class rooms, see HYGIENE, SCHOOL.

II. *Internal Arrangement of the School-House.* — Every district-school house should have a vestibule, a main room, and one or more class-rooms, unless the school is taught by only one teacher. The vestibule should be commodious, dry, well-lighed, and properly supplied with pegs for hats and outer garments, mats, wash basins, and all means for ensuring personal cleanliness. In mixed schools, it should be divided into two rooms. The best authorities are almost unanimous in the opinion that the shape of the school room proper should be that of an oblong about twice as long as broad, the size being determined by the probable attendance. The ceiling should be from 12 to 15 feet in height, the controlling consideration being that each pupil should have not less than 108 cubic feet of air space. The door and the teacher's desk should be at opposite ends of the room, the former, when practicable, at the southern extremity, the northern being without windows, and provided with a shallow platform about 15 inches high. This arrangement enables the teacher to survey the school, and is simple and convenient for examination or exhibition purposes. Very large school rooms are not expedient, experience having shown that a large number of pupils may be supervised and taught to better advantage in two rooms of medium size, the teacher having an assistant for the purpose, than in one large room. A separate class room is indispensable in all schools, except the smallest, the number being increased according to the size of the school. In its construction, the class room should conform proportionally to the school room, and should, if possible, be in immediate connection with it, but separable from it completely as far as noise is concerned. The teacher's room, in small schools, could be utilized as the school library, or as a temporary storing place for such delicate apparatus as required special care. Schools of other grades and sizes will, of course, require a different arrangement of rooms. Nearly every civilized country, in fact, has its own plans for the construction of school-houses, and the arrangement of school and class rooms, determined by the peculiarities of its school system, or by national characteristics. Interesting exhibits of these are made at every world's fair; and the comparison there instituted will, probably, result in a retention and general diffusion of the best. It is possible here only to refer to the subject, and to cite a few standard works which open the door to a voluminous literature. (See BUISSON, *Rapport sur l'instruction primaire à l'exposition universelle de Vienne en* 1873 (Paris, 1875); BARNARD, *School Architecture* (N. Y., 1863); JOHONNOT, *Country School-Houses*, (N. Y., 1858); and *Our School-Houses* (N. Y., 1873); EVELETH, *School-House Architecture* (N. Y., 1874). (See also the references at the end of the article SCHOOL FURNITURE.)

SCHOOL MANAGEMENT is a department of the teacher's profession which includes (I) the organization of the school, and (II) its conduct. Under the former, must be considered (1) the classification (see CLASS); (2) the distribution, as to order and time, of the branches to be taught, (course of instruction and programme); and (3) the proper assignment of the work of instruction (in a graded school) to the several teachers, either in accordance with the class system or with the departmental system (q. v.). The conduct of the school has reference (1) to instruction, and (2) to discipline. Great care should be taken, by means of a carefully constructed programme, or daily order of exercises, to secure to each subject its proper amount of time, according to its place in the course of instruction, as well as to insure an equable advancement on the part of the pupils in each subject of the grade, as preliminary to *promotion*. The promotion of pupils is a matter of great practical importance in the management of a school. One of the most serious errors made by teachers is the too rapid advancement of their pupils. Promotions should always be based upon a careful examination; and, in a graded school, care should be taken that every grade is passed through in a legitimate manner, that is, without hurry or cramming. When the school is ungraded, the advancement of individual pupils is to be considered; but there is the same need of avoiding haste, so as to secure thorough proficiency, as the basis of promotion. *Government* is, also, an important department of school management; since, without efficient government, all attempts at effective school instruction must be fruitless. (See COURSE OF INSTRUCTION, DISCIPLINE, and GOVERNMENT.)

SCHOOL RECORDS are of great importance, both in connection with the management of the school itself, and for the purpose of affording a means of obtaining accurate and valuable returns to be embodied in a general system of school statistics. These records are, therefore, to be arranged from a twofold stand-point: (I) What are needed as auxiliary to the keeping and instruction of the school itself; and (II) What are required for a proper administration of the school laws, as well as to show the condition of the system to which the school belongs, and the progress of education in the town, city, and state in which it is located, as compared with other places.

I. For the carrying out of the first object, there should be an accurate registration of each pupil's name and age, his parent's name, the date of his admission into the school, of his successive promotion from grade to grade, and of his discharge, with the cause of the same, thus presenting a history in outline of the pupil's whole career in the school. The register kept for these items should be in such a form as to be easy of reference, either by a numerical designation of the pupils in the order of their admission, or by an alphabetical arrangement. Auxiliary to the *school register*, there may be (in large schools, should be) an *admission book*, and a *discharge book*, the entries being first made in these books, and transferred at stated times (weekly or monthly) into the *register*. The *admission book* should contain a statement of the antecedents of the pupil, and the *discharge book*, the cause of his leaving the school, and his destination. There should, also, be books showing the school history of the pupil more in detail, as his daily attendance, conduct, merit and demerit marks for recitations, etc. One book, usually called the *roll book*, may be used for all these particulars, there being, in a graded school, one such book for each class, and kept by the class teacher. In this book may also be entered the place of residence of each pupil, in order to facilitate communication with the parents. The *school diary* is auxiliary to this, containing transcripts from the *roll book*, with summaries of marks and a statement of class standing, the pupil being required to take this diary home for the inspection and signature of his parents. Other records, besides those enumerated, may be kept for special purposes; but, ordinarily, these are all that are indispensably requisite to carry on the internal operations of the school.

II. The records made necessary by the provisions of law under which the school is established and supported, will vary, of course, with the nature of those provisions, and with the organization of the system to which the school belongs. But there are certain common and indispensable features, inasmuch as there are facts which all school records for this purpose should aim to show, among which may be mentioned the following: (1) The number of pupils enrolled during the year; (2) The average enrollment, or "average number belonging"; (3) The number in attendance at each session of the school; and (4) the number of pupils of each grade, and of certain specified ages.—No attempt is made in this article to present the forms of these records, as there is a wide diversity of form in different places, and as the form is of secondary importance to the presenting of the required facts.—See Morrison, *Manual of School Management*, s. v. *Registration* (Glasgow and London, 1874); Wickersham, *School Economy* (Phila., 1868); Wells, *The Graded School* (New York, 1862).

SCHWARZ, Friedrich Heinrich Christian, an eminent German educationist, born in 1776, at Giessen; died at Heidelberg, in 1837. His chief work is *Erziehungslehre* (*Doctrine of Education*), of which the first part appeared in 1802; the fourth and last, which was issued in 1813, contains the *Geschichte der Erziehung* (*History of Education*), a work of permanent value. "Among teachers," says Dittes (*Schule der Pädagogik*), "the *Lehrbuch der Pädagogik und Didaktik* (1805) of Curtmann is better known than the *Erziehungslehre*." He, however, asserts that, while Schwarz has not given so clear an exposition of the principles of education and instruction as Niemeyer, his writings are more replete with practical observations and suggestions.

SCIENCE, The Teaching of. In this article, the treatment will refer to the teaching of science (I) as a branch of elementary instruction, and (II) as a department of higher education.

I. This subject is one into which great confusion has been introduced by the use of the words *science* and *scientific* in two different senses. In the strict sense of the term, the scientific knowledge of a subject is a knowledge of the laws which harmonize and explain its various phenomena. Science goes beyond mere appearances, and finds that, amidst endless variety, there is unity; and, amid apparent discord, there is harmony. In this sense, it is the highest outcome of intellectual effort. The human mind deals first with the concrete. For a long time it scarcely rises above the information of the senses. It then groups the impressions of the senses into more comprehensive unities, and in this process gains a certain power of abstraction. But science supposes that the mind has been long practiced in that power of abstraction and generalization. It views in succession the principal facts in any department of nature as a whole, and it seeks to find the invisible order which pervades them all. In this sense of the term, also, all subjects admit of scientific treatment; as there can be no doubt that law pervades all phenomena, there must be a science of mental phenomena as well as of physical phenomena; and, therefore, no single phenomenon can exist which has not its own place in the system of the universe. But, from various considerations, the term *science* has been often restricted to the explanation of the laws which regulate matter, and this is the sense in which it is used in this article. Now it is plain that, in the strict sense of the term, children cannot be taught science. If the scientific stage is the highest in the development of the intellectual faculties, we cannot expect to find it in the school. It belongs to the university. But we may lay the foundation of it at an earlier period. Indeed, we cannot help doing something toward this work; but we may do it awkwardly and unconsciously, or skillfully and consciously. The latter is the function of the educated teacher. We must, therefore, inquire more minutely into the mode in which the foundations of science are laid. For this purpose, we shall quote the words of the late Professor Payne, to whom the preparation of this article for the *Cyclopædia of Education* was first assigned. (See Payne, J.) Science, he defined, as "organized knowledge", and, after explaining the meaning of *organized* in this definition, he proceeds: "Returning to the other factor of the definition, *knowledge*, we observe that there are two kinds of knowledge—what we know through our own experience, and what we know through the experience of others. Thus, I know by my own knowledge that I have an audience before me, and I know through the knowledge of others that the earth is 25,000 miles in circumference. This latter fact, however, I know in a sense different from that in which I know the former. The one is a part of my experience, of my very being. The other I can only be strictly said to know when I have, by an effort of the mind, passed through the connected chain of facts and reasonings on which the demonstration is founded. Thus only can it become my knowledge in the true sense of the term. Strictly speaking, then, organized knowledge, or science, is originally based on unorganized knowledge, and is the outcome of the learner's observation of facts through the exercise of his senses, and his own reflection upon what he has observed. This knowledge, ultimately organized into science through the operation of his mind, he may with just right call his own; and, as a learner, he can properly call no other knowledge his own. What is reported to us by another is that other's, if gained, at first-hand, by experience; but it stands on a different footing from that which we have gained by our own experience. He merely hands it over to us; but, when we receive it, its condition is already changed. It wants the brightness, definiteness, and certainty in our eyes, which it had in his; and, moreover, it is merely a loan, and not our property. The fact, for instance, about the earth's circumference was to him a living fact; it sprung into being as the outcome of experiments and reasonings, with the entire chain of which it was seen by him to be intimately—indeed, indissolubly and organically—connected. To us it is a dead fact, severed from its connection with the body of truth, and, by our hypothesis, having no organic relation to the living truths we have gained by our own minds. What I insist on, then, is, that the knowledge from experience—that which is gained by bringing our own minds into direct contact with matter—is the only knowledge that, as novices in science, we have to do with, The dogmatic knowledge imposed on us by authority, though originally gained by the same means, is really, not ours, but another's—is, as far as we are concerned, unorganizable, and, therefore, though science to its proprietor, is not science to us. To us it is merely information, or hap-hazard knowledge."—The account here given contains the very pith of the matter, and cannot be too deeply pondered and impressed on the mind; and we shall, therefore, put the same thoughts in another shape. The child first perceives individual objects. He notices the qualities in these objects; and, when he finds the same qualities recur in different individual objects, he naturally groups them together under the same notion or name. This is the child's first effort at generalization. (See INTELLECTUAL EDUCATION.) Now, it is plain that if he had not known the individuals, he could never have made the generalization; and that, if any one were to tell him the generalization without his having seen the individuals and noticed the similarity, the generalization would be of no real use to him. Out of this fact flow some of the principal rules in regard to the method of teaching science: (1) The pupil must be brought face to face with nature; he must see the individual; he must himself make the experiment. (2) He must make the generalization, himself; he must be a discoverer. It is here, however, that the skillful teacher can wisely interfere. The child, if left to himself, might be too long in making the discovery, for he might not stumble upon individuals which contain similarities. The teacher, therefore, takes care to bring similar individuals before his pupils in sufficient number. He sternly checks his own wish to shorten the work by telling the generalization; but he prepares the way for the pupil's making it by adducing instance after instance, until the similarities cannot but become visible to the pupil's mind. And this rule suggests another,—that, wherever it is possible, the pupil should be led along the road over which mankind traveled in making the discovery originally. He must, of course, commit many blunders before he reaches the truth; yet, under a skillful teacher, such a process is eminently educative. But, besides the making of generalizations, there is also the faculty of observation to be carefully cultivated. Indeed the cultivation of the faculty of observation is essentially necessary to the formation of correct generalizations. At first, the child makes his generalizations unconsciously. He sees a tree, and then another tree, and then another, and somehow they impress him as being like; but he has no accurate conception in regard to the points in which they are like.—Even when he becomes conscious of the points of resemblance in objects, he may find that the resemblances in them are on the surface, and that there are greater differences separating the objects from each other. He is now coming nearer the stage in which he can deal with a subject scientifically. For observation has to furnish, as the basis of scientific conceptions, a more accurate knowledge than that possessed by the ordinary observer. The pupil has to notice qualities which ordinarily escape observation. The teacher again must take the utmost care that the pupil has really observed the peculiarity before he tells him the special name given to it. Else the pupil's mind will be crammed with a number of technical terms of the meaning of which he probably will have no clear conception; and even should he have a clear conception of their meaning when he hears it from his teacher, he will be sure to forget it very soon. In one word, the pupil must conquer every step in science by personal observation and experience. He must find out every thing himself. The teacher has simply to arrange the order in which the facts of nature are to be presented to the pupil, and to lay before him only those phenomena which it is important for him to observe. From what has been said, it is plain that the plan of going through all the principal phenomena of a science is not to be adopted in schools. This is a method appropriate only to the last stage of scientific instruction. The teacher must select the portions of science which will be most educative; and he will treat them in such a way as to interest the pupil, and make him take an active part in ascertaining the facts of nature. At the same time, he will take care to make his various lessons bear on each other. Though he does not disclose a law, but leave it to dawn upon the pupil's mind from the presentation of instances, he will see to it that each lesson adds to the structure which the previous one has helped to raise. He will have a fixed plan in his own mind; and he will look forward to the intellectual result which he is to produce, in process of time, by the examples and experiments which he makes the pupil observe and perform.—In all these considerations, we have been looking at science as a subject worthy of being studied for its own sake. This is unquestionably true. The intellectual powers of man are an essential feature of man's nature, and they demand exercise. This exercise is invariably accompanied by an intense pleasure. Now, the scientific knowledge of nature is eminently calculated to call the intellectual powers into activity, and therefore it opens up to man a source of pure and lasting enjoyment. But the teacher may look on the knowledge of science from other points of view. Man is corporeal, and his physical well-being depends on his coming into proper relations with physical nature. It is important for him to know these relations, and the teacher of youth will endeavor to enlighten the mind of his pupil in regard to them. At the same time, these relations are most deeply impressed on the mind, when the facts of science are taught according to the laws of education. If I inform a boy that carbonic acid gas is deleterious, the impression is of the faintest nature, and will not lead, in nine cases out of ten, to any action; but if I show the boy how to produce carbonic acid gas by the union of its component elements, that is, if I lead him to make experiments by which the truth will be forced upon his mind without my telling him that it is injurious to life; and if, in addition to this, I make him discover that he is continually exhaling this gas, he will be deeply impressed with the necessity of ventilation, and will make every effort to procure it. Then, again, nature presents herself not merely as the embodiment of law but also as the embodiment of beauty; and the teacher should, therefore, endeavor to bring out this feature occasionally. He will point, for example, to the exquisite structure of flowers; he will lead the child to feel the loveliness of landscapes; he will interest him in the habits of animals; in fact, he will try to make nature reveal herself to him in her concrete loveliness and variety.

Among the questions keenly discussed in connection with science teaching are (1) the *order* in which the sciences should be taught, and (2) what sciences are suitable for schools. Opinions on these subjects will necessarily differ until agreement as to the meaning of terms is reached. The fact is, as we have seen, that all the sciences call for processes of thought which can be reasonably expected only in mature minds; but it is true, at the same time, that separate facts, in all these sciences, tending towards a unity, may be discovered by a child of eleven or twelve years of age. Faraday said that chemistry could be taught to a boy of eleven; others denied that it could; and in a certain sense, both were right, from their respective points of view. At the same time there is no doubt that the facts of some sciences, in the average, are much more complicated than those of other sciences; and, therefore, there is wisdom in teaching them in a certain order. Botany, for instance, is among the simplest of the sciences. It calls into play the power of minute observation. The child is interested in examining the structure of the plant and the growth of the various parts. An appeal is also made to his powers of grouping or, in other words, of classification. And the pupil has a large field in botany for these two activities. (See BOTANY.) The same is true of the other science of classification, zoölogy; but the processes are a little more complicated. It should, therefore, naturally follow botany. From these, the pupil should proceed to some department of physics, and from that, advance to chemistry. The one should go before the other; because the processes of chemical motion are much more difficult to observe accurately than those of mechanical motion. And the course of science might well end with physiology, in which many of the modes of reasoning employed are abstruse, and the student is continually liable to be misled by appearances and analogies.

II. One of the most important aims of the educator is to lead man to recognize how to live most successfully for himself; to realize the responsibilities of his position, and, by seeking to comply with these responsibilities, to attain to the greatest possible happiness. In this process of education, the student must be led to recognize the material and physical conditions of his existence; to know himself, not as an independent being, but as one dependent upon the multifarious conditions of the vast scheme of nature, and as one, who, alike in what he is and in that of which he is capable, is strictly under the control of natural law. In other words, man can only know himself by comparison with other objects in nature,—can only know his powers by comparison with the forces by which other forms of matter are controlled. Again, as a mere question of material prosperity, the study of natural science is forced upon our consideration. No thoughtful man wandering through the aisles of a great international exhibition can fail to see that all progress in applied science and the arts must be based, in the first place, upon an exact knowledge of natural resources, material and physical. It will be admitted that knowledge of all kinds is fundamentally based upon the evidence of our senses, but such evidence is apt to mislead, unless checked by experiment; experiment, to be of real utility, must be exact and systematic. The reasoning that draws conclusions from such experiments must be logical: and language, at once ample and exact, is required as an implement, only of value when wielded with precision, to widen the fields of inquiry with the utmost economy of mental labor. We are compelled to make these remarks because the true importance of a scientific study of nature has not been recognized by the greater part of those who are engaged in education. A knowledge of the leading truths of natural science is, however, essential to education, (1) because of their fundamental character, and (2) because of the method by which such sciences are pursued, which method is the same as that which ought to obtain in every action of our every-day lives. Comparing the training given by language and mathematics with that given by natural science, we see that, whilst language cultivates the memory, and mathematics trains the reasoning faculties, neither affords any means for the cultivation of observation and experiment. Turning to the natural sciences themselves, we find that the physical branches cultivate observation, experiment, and inductive reasoning; while the material branches, including the natural history sciences, cultivate especially the faculties of observation and systematic classification. But, in addition to this, from the multitudinous *data* with which the latter deal, and the impossibility of obtaining complete series of such *data*, these studies inevitably lead the inquiring mind to a constant consideration of probabilities, or, in other words, to a habit, of the utmost importance to us practically, of justly weighing circumstantial evidence. In view of the vast mass of facts accumulating more and more rapidly each day from the various fields of scientific investigation, it is impossible that any human mind can grasp all the details of even a single branch. The following considerations are, however, important in this view of education: (1) that, by experience in some two sciences, the one physical and the other relating to the forms assumed by matter, the student should learn the principles on which these natural sciences are pursued, and therefrom be able to appreciate the value of scientific training and knowledge; (2) that he should understand the general scope of the various sciences; (3) that he should be familiar with the broad generalizations of science; (4) that he should not be ignorant of such common scientific details as occur to us every day, and have an immediate and direct connection with our welfare and success in life; and (5) that he should be taught how to obtain information by reference, and how to weigh the trustworthiness of authorities. In order that the second and third of these requirements may be intelligently obtained, they must logically be preceded by the first, and simultaneously the aquisition of the knowledge implied by the fifth may well be commenced. In the physical branches of scientific inquiry, qualitative analytical chemistry theoretically best meets the requirements of the case; in the material sciences, we may select one of those which are called *natural history sciences*. Under this head, certain of the natural sciences which treat of the living forms of matter were formerly included; but the term is a most indefinite one, and must cease to be used at all, if confined to its old signification. The sciences especially included under it, botany and zoölogy, have been placed upon altogether new and broader foundations as branches of biology, so that they now cover morphological and physiological ground never contemplated in the old use of the term. There would seem to be a propriety in using the term to express that pursuit of nature which is essentially out-of-door in its character, — the study of the external relationship of beings to each other; and in this view we should certainly need to include geological investigations. At the same time, it will be apparent to every naturalist that the scope of such a term could not be rigorously defined. There can be no doubt that an out-of-door study of nature ought to be an essential element of education. It may be long before it is generally introduced into the course of school education, but it should certainly be enforced upon the community as a duty at least in home culture. It should be used to cultivate habits of close, exact, and systematic observation, commenced in the field and continued in the laboratory; of judiciously collecting, carefully preserving and classifying, some one or more series of natural objects; and of referring for information not to be obtained by personal inquiry, regarding the objects observed and collected, to trustworthy sources. By well-judged training in either botany or any one of the branches of zoölogy, the ends above indicated may be attained; whilst the general spirit of observation an inquiry in the wide field of natural science that will be encouraged, will lead to a breadth and liberality of mental tone. Nor need this general and more desultory observation be dreaded, as apt to lead to hasty, unfounded, and inexact acquirements, if the mind is duly drained, as had been suggested, in rigorous methods of thought by the exact pursuit of some special subject of scientific study. If there be any truth in the suggestions just thrown out, it will be apparent that such training in the natural history sciences cannot be commenced too early in life, because the spirit of the training is such that it should imbue the entire mental culture of the individual; and, furthermore, if this early training has been neglected, the study of science in an advanced period of education, will not be so successful, because it will lack the vivid conceptions which can only be acquired by the exercise of the observing faculties in early life. It only remains to add that, as all teaching by the very nature of these sciences must be objective, the duty of the instructor, at every stage of science teaching, is to supplement nature and not to take her place,—not to impart information but to guide the pupil in the self-acquirement of knowledge. Books, similarly, are only to be permitted as dictionaries to explain such points as the pupil cannot elucidate by his own efforts.—See Payne, *The True Foundation of Science-Teaching* (London); Wilson, *Essay on Teaching Natural Science in Schools*, in Farrar's *Essays on a Liberal Education* (London); *Lectures on Education*—delivered at the Royal Institution of Great Britain (London, 1855); Whewell, *On the Principles of English Education* (London, 1838); Youmans, *The Culture Demanded by Modern Life* (New York, 1867); Spencer, *What Knowledge is of Most Worth in Education: Intellectual, Moral, and Physical* (New York, 1866).

SCIENCE OF GOVERNMENT, the name given to a branch of instruction in primary or secondary schools, which is designed to impart to the pupils a knowledge of the political system under which they live, and to make them, as far as requisite, familiar with the different functions of government, and the mode in which they are performed. It, generally, includes a consideration of the constitution of the country or state, the qualifications and duties of the principal officers of government, the legal restrictions imposed upon citizens, and an outline of civil and municipal regulations. Many excellent treatises have been prepared for this purpose for use in elementary schools: and, there can be no question of the value of this department of instruction for all classes of pupils, particularly in public schools, one of the most important objects of which is to prepare for intelligent and useful citizenship.

SCIENTIFIC SCHOOLS are higher institutions, in which instruction in science, practical and theoretical, is the special object. They include polytechnic schools (those in which various branches of science are taught), and special schools, such as those of mining, engineering, etc. —In Europe, they are generally supported by the state. The real schools (q. v.) in Germany are essentially scientific schools of a lower grade. In *Austria Hungary*, there are seven polytechnic institutes (having, in the winter of 1875—6, 327 instructors and 4,405 pupils); namely, in Vienna, Buda-Pesth, Prague (one German and one Bohemian), Gratz, Lemberg, and Brünn. The oldest are those in Prague, founded in 1806. That in Vienna, founded in 1815, has five departments (one of general science, and schools of engineering, architecture, mechanical engineering, and chemistry); the others lack one or more of these departments.—The *German Empire* has 10 scientific institutes (having, in the winter of 1875—6, 498 instructors and 6,644 pupils); namely, the Academy of Architecture (*Bau-*

akademie) in Berlin; the Technological Academy (*Gewerbe-Akademie*) in the same place, with departments of mechanics and engineering, of chemistry and metallurgy, and of naval construction; and the polytechnic schools in Hanover, Aix-la-Chapelle, Munich, Dresden, Stuttgart, Carlsruhe, Darmstadt, and Brunswick. The last, founded in 1745, is the oldest. The Berlin academies were founded in 1799 and 1820, respectively. The polytechnic schools have several departments: that in Munich includes one of agriculture; that in Dresden, one of mathematics and physical science for teachers; that in Carlsruhe, one of forestry; and that in Brunswick, one of pharmacy, and one of forestry. Common to most of them, as branches of instruction, are mechanics, engineering, architecture, mathematics, physics, and chemistry.—In *France*, the Polytechnic School in Paris is organized on a military basis, and has for its object the preparation of engineers, and candidates for positions in the artillery, the navy, the public works, mines, the general staff, the powder and saltpeter factories, the telegraphic institutions, and the tobacco administration. It was founded in 1795, and, in 1873, had 426 pupils. It is, properly, only preparatory to higher special institutions, military and civil. The latter include the Central School of Arts and Manufactures (*École centrale des arts et manufactures*), designed for the instruction of civil engineers and directors of factories and metallurgical establishments; the School of Bridge and Road Building (*École des ponts et chaussées*); and the Conservatory of Arts and Trades (*Conservatoire des arts et métiers*). These are all in Paris. The last-named has a collection of machines, instruments, products of agriculture and industry, and a library. There are thirteen scientific courses in technical subjects, political economy, industrial legislation, and statistics, and, also, an inferior school of drawing and descriptive geometry. The Museum of Natural History in Paris affords instruction to students.—In *Italy*, there are scientific schools in Milan, Turin, Naples, Rome, Padua, and Palermo, the last three being connected with the universities in those places.—In *Russia* are found the Technological Institute, the Engineering Institute, and the School of Architecture, in St. Petersburg, and polytechnic schools, in Riga, Moscow, Lodz, and Helsingfors (Finland). The last, in 1872—3, had 118 students; the others, in 1874, 2,570. The institution in Riga has seven departments: an agricultural, a chemical, a surveying, an engineering, a mechanical engineering, an architectural, and a commercial department.—In *Belgium*, scientific schools are connected with the universities.—*Switzerland* has a polytechnic school in Zürich, with eight departments: an architectural, an engineering, a mechanical, and a chemical department, a school of agriculture and forestry, a department for the education of special teachers of mathematics and natural sciences, a general philosophical and politico-economical department, and a preparatory mathematical course. This institution was founded in 1854; and, in 1875—6, had 92 instructors and 912 students. There is, besides, a scientific department in the Academy of Lausanne, and an architectural department in the Lyceum of Lugano. The other continental nations also have scientific schools. — In *Great Britain*, there are no polytechnic schools. There are, however, private associations that offer instruction in science; and the South Kensington Museum in London, which possesses rich collections in art, natural history, and science, also maintains schools. Lectures are also given on scientific subjects in the universities of London, Glasgow, Edinburgh, and Dublin. The Royal College of Science, in Dublin, and the Royal Mining School, in London, may also be mentioned.

In Europe, there are numerous special schools of agriculture and forestry. Austria has a school of vine culture and pomology at Klosterneuburg. The principal mining institutions of the continent are as follows: in Austria-Hungary, the mining academies at Leoben, Pribram, and Schemnitz, and eight mining schools; in Germany, the mining academies in Berlin, Clausthal, and Freiberg (opened in 1766), and 14 mining schools; in France, the National Mining School in Paris (of a higher grade), and the mining schools at St. Étienne and Alais; in Italy, the mining schools at Caltanisetta and Agordo, and the special school for quarrying and working marble, at Carrara; in Russia, the Imperial Institute of Mining and Metallurgy, in St. Petersburg, and seven intermediate and lower mining schools; in Sweden, the mining department of the Technological Institute of Stockholm; in Belgium, the special school of mines in the University of Liege, and the provincial school of trades, industry, and mining, at Mons.

In the *United States*, the Commissioner of Education reports, in 1875, 74 schools of science (mining, engineering, agricultural, etc.), including separate institutions and departments of colleges and universities, with 758 instructors and 7,157 students. Of these, 41 are endowed by the national land grant as agricultural colleges; but most or all of them have one or more additional courses, as of general science, engineering, etc. (For their special features, see AGRICULTURAL COLLEGES.) The terms of admission to American scientific schools vary somewhat in the different institutions, but include arithmetic, elementary algebra and geometry, geography, English grammar and composition, and history. The course generally covers four, sometimes only three years, and leads to the degree of Bachelor of Science, or appropriate special degrees (as Civil Engineer, etc.). The curriculum commonly embraces the higher mathematics, English language and literature, history, French and German, chemistry, drawing, physics, natural history, astronomy, mental science, and political economy, besides special branches appropriate to the particular course pursued. Of separate institutions, the oldest is the Rensselaer Polytechnic Institute in Troy, N. Y., founded in 1824, and re-organized in 1849. It has a course in civil engineering (understood to include mechanical or dynamical engineering, road engineering, bridge engineering, hydraulic engineering, etc.). Other prominent institutions are the Massachusetts Institute of Technology (opened in 1861), in Boston, with 10 courses (civil engineering, mechanical engineering, mining engineering, architecture, chemistry, metallurgy, natural history, physics, science and literature, philosophy); the Illinois Industrial University (1867), at Urbana, Ill., with courses in agriculture, horticulture, mechanical, mining, and civil engineering, architecture, chemistry, natural history, English and modern languages, ancient languages, military science, commerce, and domestic science and art (for women); the Stevens Institute of Technology (1871), in Hoboken, N. J., a school of mechanical engineering; Purdue University (1874), at Lafayette, Ind., with a course in general science, and courses in agriculture, horticulture, civil engineering, industrial design, physics and mechanics, chemistry and metallurgy, and natural history; the State School of Mines (1874), at Golden, Col.; and the New Market Polytechnic Institute, at New Market, Va., with a mechanical-engineering, a civil-engineering, a chemical, and a classical course. Among scientific departments (for mention of which see the articles on the institutions to which they belong), may be instanced the Lawrence Scientific School (Harvard University), the Sheffield Scientific School (Yale College), the School of Mines of Columbia College, the Chandler Scientific Department and the Thayer School of Civil Engineering (Dartmouth College), the John C. Green School of Science (College of New Jersey), the Scientific School of Rutgers College, the Engineering School of Union University, the Pardee Scientific Department of Lafayette College, and the Missouri School of Mines and Metallurgy (University of Missouri). Cornell University and some other institutions have various scientific courses, without a distinct organization. The Worcester County Free Institute of Industrial Science, at Worcester, Mass., was opened in 1868. It offers instruction in mechanical engineering, civil engineering, drawing, physics, chemistry, English, French, and German. The course occupies three and a half years for those preparing to become mechanical engineers, and three years for all others. Much attention is given in this institution to practice, it being designed to impart sufficient practical familiarity with some branch of applied science, to secure to its graduates a livelihood. At the middle of the first year, every student (except the mechanical section) chooses some department, under the advice of the instructors, and devotes ten hours a week and the month of July, to practice in that department until his graduation, that is, for two and a half years. The mechanical section practice in the machine shop from the beginning, that is, for three and a half years. Students who select chemistry, work in the laboratory; the civil engineers, at field work or problems in construction; and the designers, at problems in design. The shop is managed as a manufacturing establishment, in order that the students may always work in the wholesome atmosphere of real business.

SCOTLAND, the northern part of the island of Great Britain, and an important division of the United Kingdom of the same name. Its area contains 30,463 sq. m.; and its population, according to the census of 1871, was 3,360,018.

Educational History.—The system of common schools, under which Scotland became celebrated for the general diffusion of education among its people, was founded in 1695, by the law which required that a school should be established and "a school-master appointed in every parish by advice of the presbyteries." (See PRESBYTERIANS.) The fundamental principle of free schools was recognized in this act, thus entitling Scotland to the credit of having first established schools for primary instruction to be supported at the public expense. Indeed, as early as 1617, King James visited Scotland to oblige the privy council to establish parish schools. In 1696, the system was completed by an act of parliament. The minimum of salary to be paid the teacher was fixed, and the proprietors were required to meet, and vote the requisite funds, which if they failed to do, the commissioners of taxes were required to levy the school tax. It is the effect of this law, and of the parish schools that it created, which has been said to be, "beyond contradiction, one of the most memorable examples of the action which the diffusion of knowledge exerts upon the morality and well-being of nations." In 1803, the salary of the school-master was fixed at £16 13s. 4d. as a minimum; and, in 1828, it was again raised, to £25 13s. In addition to the salary fixed by law, the teachers received a small fee from each pupil. Besides the parish schools, many others have been established by the Society in Scotland for Propagating Christian Knowledge, as well as by the Established Church, and other religious denominations. But, while the parochial system was most beneficent in its operation for many generations, it was found inadequate for the wants of the great modern towns. There was, however, no difficulty in regard to religion; because, in every class of schools, the religious views of parents were carefully respected. Hence, Roman Catholic children often attended the Presbyterian schools, which constituted the great majority of all the schools in the country. By the act of Aug. 6., 1872, a new system was inaugurated, built on the old parochial system.

Primary Instruction.—According to the law of 1872, "to amend and extend the provisions of the law of Scotland on the subject of education," the management of that department of state affairs is intrusted to the Committee of Council on Education. The provisions of law here referred to are those of the several laws of 1696, 1803, and 1828, already referred to, and the laws of 1837, 1838 (to facilitate the foundation and endowment of additional schools), and 1861 (the Parochial and Burgh School-masters Act). A board of education has been temporarily established, consisting of five members, appointed by the queen, but to be responsible to the Scotch Education Department. The national system organized under the law of 1872, is, in its main features, similar to that established in England by the law of 1870. The denominational system, however, is more thoroughly interwoven with it; but parliamentary grants cannot be made "for or in respect of religious instruction." The "conscience clause" provides that every public school shall be open to children of all denominations, and any child may be withdrawn by his parents from any religious observance in the school, which must be practiced, if at all, at the beginning or at the end of the session. A school board, consisting of not less than 5 nor more than 15 members, is elected in each parish and burgh; and the electors consist of all persons on the latest *valuation roll*, as owners or occupiers of "lands or heritages of the annual value of not less than £4, situated in the parish or burgh. Every voter is entitled to as many votes as there are members to be elected, and may distribute them among the candidates as he thinks fit. These school boards have the charge of the schools, and appoint and dismiss the teachers; but they are not required to make any restriction as to religious teaching beyond the provisions above stated. All the teachers must be certificated, after an examination by examiners appointed by the school board; and such examiners must be "professors in a Scotch university, or teachers of distinction in a higher-class public school." The revenues of the school consist of (1) contributions payable from the common good of the burghs in which they respectively exist; (2) all endowments applicable to the general purposes of the respective schools; (3) endowments for the promotion of instruction in particular subjects, or for the benefit of teachers of particular branches in the respective schools; and (4) fees paid by scholars. The schools are not free, except to indigent pupils, the fees for whose instruction must be paid out of the poor fund of the parish or burgh, on the order of the school board. The compulsory clause prohibits any person from employing a child under the age of 13, who has not attended school regularly, for at least 3 years, between the ages of 5 and 13, and is unable to read and write, unless he makes provision for the education of the child. To exempt such employer from prosecution under this clause, an inspector's certificate of the child's ability to read and write must be shown. The general provisions of the Scottish Education Code are similar in character to those of the English code. (See ENGLAND.)—The chief items of school statistics for 1875 are as follows:

Number of children of school age (5—13)	629,254
" " pupils enrolled in the public schools	290 874
Average daily attendance	212,206
Number of schools under school boards	2,303
" " certificated teachers	3,854
" " pupil-teachers	2,475

In 1874, the whole number of pupils enrolled in the schools was 344,628, of whom 46,276 were under 6 years of age; 252,521. between 6 and 12; and 45,831, above 12. The aggregate average attendance was 263,748; and the number of certificated teachers, 3,165. Accommodation was afforded for 372,000 pupils at 8 square feet of superficial area per child. In 1876, the annual grants schools showed an average attendance of 304,000. The average attendance all over Scotland is about 75 per cent of the enrollment. The number of schools inspected in 1874 was 2,609, of which 221 did not fulfill the conditions permitting annual grants. There were 102 night schools, attended by 5,555 scholars above 12 years of age. There were 6 training colleges, attended by 822 students. There were 12 reformatory schools, with 791 boys and 257 girls; and 27 industrial schools, with 2,493 boys and 992 girls. The compulsory education system of Scotland is represented as being remarkably efficient and satisfactory, having increased the attendance, from 1872 to 1875, to the extent of 42 per cent. The inspection is similar to that of England, the grants being allowed only on results as shown by passes under the inspector's examination. To this system much objection is made, the teacher's success and pay depending too much on the judgment, and, as is said, sometimes on the caprice, of the inspector.

Educational Associations.—There are several educational associations in Scotland, especially distinguished among which is the Educational Institute of Scotland, of comparatively recent establishment, which has its branches in various parts of the country, its roll of members now numbering about 2,000. The Parochial Association for the Advancement of Education, recently organized at Rogart, under the auspices of the Duke of Sutherland, aims at the advancement of education in the parishes by means of an annual distribution of prizes, and the awarding of bursaries to promising pupils of the elementary schools, so as to enable them to obtain a higher education. The Edinburgh Ladies' Educational Association has rendered valuable service in improving the opportunities of their sex for a higher education.

Secondary Instruction.—In many of the large country parishes, subsidiary schools have been established, which provide for secondary as well as primary instruction. The chief representatives of secondary instruction are, however, the high schools and academies. Among them, the High School and the Academy of Edinburgh, the High School of Glasgow, and the academy of Perth, are specially distinguished. The High School of Edinburgh is mentioned, even in 1519, as the Grammar School of the City. It was re-organized in 1598, and received from King James VI. the name *Schola Regia Edinburgensis*. It prepares its pupils, who at the time of their admission must be 8 years of age, either for the university or for business life, and, therefore, corresponds partly to the German gymnasium, and partly to the real school. The branches of study are partly *compulsory* or *imperative*, as Latin, the English language and literature, history and geography, and natural history; and partly optional, as Greek, French, German, mathematics, book-keeping, drawing, and gymnastics. The Edinburgh Academy was opened, in 1824, by Sir Walter Scott. It consists of 7 classes, and likewise comprises a classical and a scientific course (*Classical Side* and *Modern Side*). It belongs to a stock company, which elects from its own midst 15 directors, who appoint the rector and the other teachers, regulate, conjointly with the rector, all the affairs of the school, attend the examination, and distribute the prizes. The classical course prepares for the university; the scientific course, for the civil and military service, and for commercial life.—The Madras College, at St. Andrews, owes its origin to the liberality of Dr. Andrew Bell (q.v.), who bequeathed the sum of £45,000, in three per cent stock, for the erection of a seminary, on a comprehensive plan, in this, his native, city. The seminary affords instruction gratis to the poor, and the fees are very low even for others. It is one of the best attended schools of this class in Scotland, having more than 1,000 pupils.—The grammar school of Perth was formerly the most celebrated in Scotland, and was attended by pupils from all parts of the kingdom.—The Jesuits have a college (St. Aloysius'), at Glasgow.—The education of women has long been on a higher level in Scotland than in England. Of late, some important improvements have been made. (See WOMEN, HIGHER EDUCATION OF.)

The ***Universities.***—Scotland has four universities: St. Andrews, founded in 1410, and confirmed by papal decree in 1411; Glasgow, founded in 1450; Aberdeen, founded in 1494; and Edinburgh, founded in 1552. The three former were established by papal authority; that of Edinburgh, by King James VI. In regard to their organization, the Scotch universities have always resembled more those of the continent of Europe than those of England. The students were divided into four *nations*, as they still are in Glasgow and Aberdeen. They do not live in the college halls, like the students of the English universities, but the jurisdiction of the university authorities over them ceases when they are beyond the walls of the university. In 1858, a uniform constitution was given them by the university act. Each of the universities has three governing bodies, — a *senatus academicus*, a university court, and a general council. The senate, which consists of the principal (elected for life by the Crown) and the professors, takes charge of instruction, of discipline, and of the finances of the university. Its decisions are reviewed by the university court, consisting of the rector, its president, the principal, and assessors nominated respectively by the chancellor, the rector, the general council, and the senate. In Glasgow, the dean of faculties, elected annually by the senate, is also a member; and, in Edinburgh, there are two additional members,—the Lord Provost of the City, and an assessor, elected by the city corporation. It is also the office of the university court, to fix the fees, to superintend the professors, and, if necessary, to censure, suspend, or deprive them of office. The general council, which is composed of all the registered graduates and *alumni*, and is a merely deliberative body, discusses all questions concerning the interests of the university, and submits them to the decision of the university court. The general council elects a chancellor for life, who becomes its president, and, in turn, appoints a vice-chancellor. The general councils of St. Andrews and Edinburgh, and also those of Aberdeen and Glasgow, conjointly return a member of Parliament. The matriculated students elect, for the period of three years, the rector, an office which is of a merely honorary character, and usually conferred upon distinguished non-residents. The Scotch universities confer the degrees of Master of Arts, Bachelor of Divinity, Doctor of Divinity, Bachelor of Medicine, Master in Surgery, Doctor of Medicine, and Doctor of Laws. At Glasgow, the degree of Bachelor of Science is also conferred; at St. Andrews and Edinburgh, the degrees of Bachelor of Science and Doctor of Science; and, at Glasgow and Edinburgh, the degrees of Bachelor of Law and Doctor of Law. Besides the university medical degrees, licenses are issued in Scotland by the Royal College of Physicians (incorporated in 1681), Edinburgh, the Royal College of Surgeons (incorporated in 1505), Edinburgh; and the Faculty of Physicians and Surgeons of Glasgow (incorporated in 1592).—The university of St. Andrews originally consisted of three colleges,—St. Salvador's, St. Leonard's, and St. Mary's, the two former of which were united in 1747, when the buildings of St. Leonard's were pulled down. The two colleges are in different parts of the town, each having its own principal; and their professors and discipline are quite distinct. The United College is appropriated to the study of languages, philosophy, and science; and St. Mary, to that of theology. The United College, in 1876, had 9, and St. Mary's, 4, professors. The number of matriculated students was 143, of graduates, 20; the proceeds available for bursaries, prizes, and scholarships amount annually to about £2,000.—Aberdeen had formerly two universities, in each of which one college had been founded. That of Old Aberdeen was founded by Bishop William Elphinstone, in 1494, under a papal bull of Alexander VI.; and early received the name of King's College, instead of that of the Virgin Mary, to whom it was originally dedicated. The other was established in New Aberdeen, in 1593, and called Marischal College, from its founder George Keith, Earl Marischal. The two foundations were united by Charles I. under the name of King Charles's University of Aberdeen, but retained their character of distinct colleges till 1860, when they were finally incorporated as the University of Aberdeen. In 1876, the university had 21 professors, 3 "Murray lecturers," 1 "Murtle lecturer" (on the evidences of Christianity), and 1 "Fordyce lecturer." The total number of matriculated students was 845; of graduates, 211; of members of general council, 2391. There is an annual public competition for bursaries, and, in 1876, the sum of £4468 was held in bursaries by 254 students. King's College now comprises the faculties of arts and divinity, and Marischal, those of law and medicine.—The University of Glasgow was founded, in 1450, by Bishop Turnbull. In 1460, James Lord Hamilton bequeathed for the use of the college a tenement in the High Street, with four acres of land adjoining; and, in buildings on this side, the university classes met for 410 years. In 1577, James VI. made provision for the support of a principal and three regents. In 1870, the classes of the university were transferred from the old buildings in the High Street to a magnificent edifice erected in Gilmorehill, in the west of Glasgow, the estimated cost of which was about £350,000. The curriculum is divided into the four faculties of arts, divinity, medicine, and law. There were, in 1876, 27 professors and 1 lecturer; the number of matriculated students was 1601; of graduates, 178; of registered members of the General Council, 2,835. The total university income amounts to £15,756.—The University of Edinburgh was chartered by James VI. in 1582; and, in 1583, the college was opened with 1 professor, or regent, and 48 students. It has since outgrown the older universities; and, in 1876, counted 36 professors, 29 assistants, and 2,065 students. The professorships are divided into the four faculties of philosophy, law, medicine, and divinity. The medical faculty has long been celebrated as one of the best medical schools in Europe, and still continues to have the largest number of students. Its library contains over 126,000 printed volumes, and 700 volumes in manuscript. Recently, a chair of the Theory of Teaching has been established in this university, like that of the Theory and Practice of Education in the University of St. Andrews, in order to afford instruction in practical pedagogy.

Special and Professional Instruction.—(1) The ministers of the Established Church of Scotland are required to study at one of the four Scotch universities, all of which have theological professorships. After devoting four years to a literary and philosophical curriculum, they are admitted into the divinity hall, and spend four other sessions in prosecuting the study of theology. The Free Church has a large divinity school at Edinburgh, called the New College of the Free Church; it has also divinity halls at Glasgow and Aberdeen. The United Presbyterians have a "divinity hall," the Congregationalists a "theological hall" (established in 1811), in Edinburgh; the Baptists likewise have a theological institution. The Roman Catholic St. Mary's College, Blairs, Aberdeen, was established in 1829.—(2) Anderson's University, or Andersonian Institution, in Glasgow, founded by Dr. John Anderson, professor of natural philosophy (died in 1796) embraces a medical school, mechanics' classes (the first established in the empire), and a department of general studies for youth. Mechanics' institutions, embracing classes in mechanics, chemistry, English literature, etc., have been established in Glasgow, Edinburgh, and other cities.—Edinburgh has, in addition to the medical faculty of the university, a school of medicine.—(3) Academies of art have been established at Edinburgh and Glasgow; the former city has also a naval and military academy.—See Sir J. K. Shuttleworth, *On Public Education* (3 vols., 1853); H. Mann, *Education in Great Britain* (1854); Blackie, *On the Advancement of Learning in Scotland* (1855); Lorimer, *The Universities of Scotland, past, present, and possible;* Voigt, *Mittheilungen über das Unterrichtswesen Englands und Schottlands* (2d edit., 1863).

SECONDARY INSTRUCTION, that grade of instruction which is usually afforded in high schools, academies, etc., or in institutions above the ordinary grade of a common or primary school. This grade of instruction is intermediate between primary instruction and superior instruction, or that afforded in colleges and universities. (See Education, and High Schools.)

SELF-EDUCATION, that development of the powers which is carried on by the individual himself, without the aid of others. To a certain extent, this education is not only unconscious, but inevitable. The constant recurrence of like conditions or actions, the knowledge of which is conveyed to the individual by the senses, during the growth of mind and body, is always attended with an increased skill in the use of the powers of both, which, of itself, constitutes an education. The agents by which this knowledge is converted into an unconscious education are chiefly habit (q. v.) and experience; the one producing increased ease of action under like circumstances, and thus rendering the individual more capable; the other enabling him to systematize his knowledge, and to use it as an instrument for further acquisition. To determine, in all cases, just where this education ceases, and voluntary self-education begins, would probably be very difficult; yet, in general, it may be said that the active intervention of the will is the most obvious feature by which self-education may be distinguished. It is usually regarded as that education which is carried on intentionally, outside, or beyond the influence, of the school. Even here, however, the definition is imperfect; for it must always be difficult to estimate at its true comparative value the strength of each of two impulses which act thus at the same time and invisibly; but, probably, a truer conception of the two powers, self-education and school education, may be acquired by supposing the difference between them to be one of function rather than of degree—school education serving rather as a director or systematizer of power, while self-education must often be looked upon as identical with innate power, from our inability to separate the one from the other. We know what training the school gives; and, though we cannot analyze the results it produces with sufficient accuracy to assign to the school and to the individual the proper share due to each, we know from many comparisons made between countries with schools and those without them, that the advantage lies decidedly with the former. That the school is rather a director of power than a creator of it, is shown by contrasting the large number of men who have enjoyed its advantages without manifesting special ability afterward in any walk of life, with those who have risen to the highest positions without this privilege. In every civilized country, the number of eminent self-educated men is large enough to justify the paradoxical saying of Emerson, that one of the chief values of a college education is to teach its worthlessness. Whatever truth there may be in this remark is due to the fact that education is of two kinds,—practical and theoretical, the first based principally upon facts and experience, and dealing largely with human nature; the other, acquired from books, and concerning itself in great measure with abstractions and theories which, though valuable enough for purposes of general culture, are of little use in practical life, and, if exclusively pursued, produce a positive disqualification for it. Of these two kinds of education, it is hardly too much to say that the former is the more available, in the ordinary affairs of life, in a vast majority of cases. Hence, it should never be forgotten by the educator, that the facilities for mental acquisition which he offers the pupil by systematic instruction, too frequently result in vacillation, or feebleness of purpose, and are almost inevitably accompanied with a loss, on the part of the latter, of that vividness of apprehension which experimental acquaintance gives. The only amends, therefore, he can make is to render his instruction as practical, and as far removed from mere book-learning, as possible. Knowledge and rote-learning have often a wonderful resemblance, while, essentially, they may have nothing in common. The picture of a Lincoln, hastily gathering book-knowledge by the light of the cabin fire; or of a Franklin, finding in the intervals of his work in a chandler's shop and a printing-office, an equivalent for the school, should be a sufficient admonition to every teacher, that the privileges of the school room are not indispensable to the most brilliant success. It is not necessary to multiply instances of self-taught men; the ranks of greatness have been almost exclusively filled from this class. Three most valuable attributes are strengthened, if not created, by a course of self-education: self-confidence, independence of judgment, and perseverance. He only who has always depended upon himself, knows accurately the limit of his powers, measures beforehand every difficulty, and does not look, at the last moment, for extraneous aid; while the habit of self-reliance thus cultivated, lays the foundation for a solidity of character which, in critical moments, is not swayed by fitful or transient influences. The third attribute, perseverance, is the necessary result of such an education. Having always been accustomed to encounter obstacles, and having always overcome them, the joy of conflict and the joy of conquest, become, to self-taught men, synonymous. The atmosphere of difficulty is as the breath of life, and the result is never doubtful to those who gather strength from opposition. These are the most essential elements of success, and, in practical matters, weigh more than all the advantages of the school. On the other hand, the commonest error of the self-taught man is a depreciation of all studies or pursuits which have no practical bearing. General culture—knowledge for itself alone, with all the pleasures and consolations which it brings—is underestimated. Accustomed always to see his thoughts followed by tangible results, the moral aspect of thought is lost sight of; and his ideal standard never rises above this utilitarian level. This narrowness of mind leads almost inevitably to a want of sympathy with liberal pursuits, and sometimes to a kind of hardness or positiveness of character which bears the appearance of arrogance. Weakness being scarcely understood by the successful, self-taught man, want of charity is a natural fruit of his habits of thought. These defects, however, are frequently removed by age; and, even at their worst, can hardly be said to be so serious as those which have been cited as incident to misdirected education in the school. Of the two kinds of education—self-education and school-education it may, therefore, be said in general, that the former is of greater value than the latter; that for all practical action in the familiar matters of daily life, all great emergencies, whether of peace or war, which require independence of judgment, promptness of decision or action, and inflexible perseverance, the self-taught man is vastly the superior; while, in purely speculative pursuits, in researches or projects undertaken without hope of immediate or material result, the man of the schools, whose education has been conducted with that broader outlook upon life which leads directly to culture solely for its own sake, manifests a far greater zeal and activity. Neither kind of education is to be commended by itself; since the deficiencies of one need to be supplied by the advantages of the other. Their relation is well expressed by De Gerando, in *Self-Education:* "If all the means of education which are scattered over the world, and if all the philosophers and teachers of ancient and modern times were to be collected together, and made to bring their combined efforts to bear upon an individual, all they could do would be to afford the opportunity of improvement"—*i. e.*, *self-education*. (See GÉRANDO.)

SEMINARY (Lat. *seminarium*, a place where seed is sown, from *semen*, seed), a term, used in education to denote an institution of learning of any grade, though oftener applied to one of secondary grade. It is also applied to certain kinds of professional schools; as a theological seminary, a teachers' seminary, etc., the idea intended to be conveyed by the term being that of preparation for subsequent usefulness.

SENECA, Lucius Annæus, the last great representative of the Stoic philosophy, born in Corduba (Cordova), Spain, about 7 B. C.; died in Rome A. D. 65. He was the son of Marcus Annæus Seneca, a noted Roman rhetorician, and the author of *Oratorum et Rhetorum Sententiæ*, etc., a work containing the memorable sayings which he had heard from the orators and rhetoricians of his time. The first studies of the younger Seneca were eloquence and the affiliated sciences; but, later, he developed a taste for philosophy, in which he enjoyed the instructions of Papirius Fabianus, Attalus, Demetrius, and Sotion. His connection with the imperial court caused him much misery, and gave a tone of sadness and weariness to his whole philosophy. He was banished to Corsica by the emperor on false charges, and remained in exile eight years; at the end of which time he was recalled, through the intercession of the empress Agrippina, who hoped, by this means, to gain favor for her son Nero with the citizens, who held Seneca in high esteem. On the accession of Nero, Seneca, who had served him as tutor, became his adviser; but he was unable to restrain the emperor's monstrous excesses and crimes. He, therefore, endeavored to withdraw entirely from the Roman court, offering to the emperor to surrender to him his property; but this was refused. He, however, succeeded in keeping himself in seclusion, but could not escape the cruelty of Nero, by whom he was condemned, on a false charge of complicity in Piso's conspiracy, and ordered to commit suicide. His death was painful but heroic, and his last words were, *To Jove the Liberator!* — Surrounded by the dissipations of a corrupt age, Seneca, with great earnestness, advocated the education of youth in pure morals, self-control, and truthfulness. He believed, that human nature, from birth, tended to evil, but that God, who is the soul of the world, inspires every man with thoughts upright, just, and pure. Seneca recognized, however, the great variety of infantile individualities, rendering it necessary for the educator to accommodate himself to particular cases. He recommended a just medium between severity and remissness. He insisted that boys should learn what is useful and practical in life; and, from his complaint that the youth of his times were studying not for life, but for the school, the well-known maxim has been deduced, *Non scholæ, sed vitæ discendum est.* His remark that the teacher himself advances in knowledge by imparting instruction, has given rise to another maxim: *Docendo discimus.* —The recent literature in regard to Seneca is fully reviewed in an exhaustive article in the *Methodist Quarterly Review* (1876), by Hurst. An edition of Seneca, designed for schools and colleges, and embracing his principal essays, epigrams, epistles, alleged correspondence with St. Paul, and parallels with sacred writers, by Hurst and Whiting, appeared in New York, in 1877.

SENSES, the Education of the. Education, through the senses, has received a great amount of attention in recent times, and a special effort to systematize it, is made in the kindergarten (q. v.); but comparatively little thought has been given to the training of the senses themselves. And, yet, there is ample experience to prove that much can be done in this direction. In cases where special senses have been called into the most vigorous action, they have attained capabilities which could scarcely have been dreamed of. It may not be advisable to attempt to cultivate each sense in every individual to the same degree of acuteness that has been reached in these extraordinary instances; but, there is no doubt that the neglect to train the senses, now almost universal, is not justifiable. The special attributes which we may assign to the senses, are quickness in receiving impressions, strength in taking hold of the impressions, and vivacity in noticing not merely the unity which is presented to the mind, but in remarking the various details which compose or characterize this unity. These three qualities are quite different from each other. If an object is held up before a number of children, some will be found able to form an impression of it much more quickly than others, while some will be very slow to catch a notion of it. So, again, they will differ in the strength of grasp with which they seize hold of the object. On some it will produce but a feeble impression, and that impression will, consequently, soon die away; but by others the object will be grasped firmly, and, consequently, held firmly. Many, too, that may be able to take strong impressions, may be surpassed by others of less strength in the capacity to catch the multiplicity of details which are presented to the view. In fact, the strong sense is generally absorbed in the unity; but the less vigorous notices the details along with the unity. Now, these qualities are inborn with the senses; and it is likely that the original difference, in these respects, which exists in different minds, is sufficient to account for the mental differences that ultimately appear among human beings. Circumstances will explain the rest of the phenomena; but these qualities are capable of cultivation, being intensified in proportion to the healthy exercise of the senses. In attempting to train the senses, the most essential process is isolation. The blind man becomes singularly expert in the sense of touch, because he brings it into continual play, and trusts much to it. He must voluntarily follow the course which necessity compels him to follow. Science has not thrown much light, as yet, on the lower senses; and, therefore, little can be done for their training. The vital sense is so closely connected with processes which take place in unconsciousness that little can be made of it. Somewhat more can be done with the senses of taste and smell. If the child were asked to shut his eyes, and determine, by taste, what objects were presented to him, the sense might become much more perfect and much more useful. Attention could be called to the general harmony that exists between the taste and healthfulness of objects, and the child might thus learn, in many cases, to choose the good and reject the evil. The same remarks apply to the sense of smell; but a wider range could be given to its activities. The child, for example, might be required to determine flowers by their smells. But it is when we come to the higher senses that much can be done by isolating practice. In regard to the sense of touch, there are three exercises which may be usefully practiced. First, the sense of touch over the body may be rendered much more acute; and, in consequence, what are called the sensory circles, very much narrowed. Experiment has proved this fact most conclusively. Then, from touch we derive the sense of pressure. Here the child may find interesting exercise in trying to estimate the weight of an object from its pressure on the hand, or on other parts of the body. This constitutes one of the peculiar exercises of *object teaching* (q. v.). Moreover, touch gives the notion of temperature; and here again the child might be taught to come very close to the exact degree of Fahrenheit by the sense of heat which he has in his touch. The training which may be given to the sense of hearing, is also various. The child might be exercised in ascertaining from what direction sounds come. He might be taught to distinguish various sounds, and, especially, musical sounds; and he might learn to analyze complex sounds. Some think, that the last exercise should always be preliminary to learning to read. Thus, the instructor utters a word, and draws the child's attention to the fact that it consists of several sounds. The child is then asked to analyze the sounds; and the child does not commence to learn to read until he is able to analyze short words into their simplest sounds. Spelling, in the sense of analyzing the sounds, according to this method, precedes reading. According to the *phonic method*, the analysis of sounds is employed to facilitate the pronunciation of words, and, hence, as auxiliary to reading. (See Phonic Method.)— The sense of sight is the one through which education takes place most of all. It is, therefore, brought into continual activity, and thus receives greater training. In the object-teaching system, this is accomplished in various ways, but, particularly, by the use of *color* (q. v.). Distinct colors are first brought before the child's eye, and he is gradually practiced in distinguishing them, so as, ultimately, to be able to note the minutest shades of difference. Then, again, the child is taught to form from sight an accurate idea of size and distance.—The space here does not admit of more than a mere glance at this important subject; and only in connection with the training of children. But, while there is no doubt that the greatest good can be done in the earliest years, the training may profitably be continued throughout the whole period of education. The organization of methods for such training has still to be discussed by educationists. Moreover, physiologists are still in great uncertainty as to many points. Great discoveries have been recently made by the researches of Weber, Wundt, Helmholtz, and others; but we may expect still more important discoveries from the investigations now going on; and there is no doubt that such discoveries will throw light on the proper method of training the senses.—See G. Wilson, *The Five Gateways of Knowledge* (4th ed., London, 1863); Wyld, *Physics and Philosophy of the Senses* (London, 1856); Julius Bernstein, *The Five Senses of Man* (New York, 1876). (See also Ear, and Eye.)

SENTENTIAL ANALYSIS. See Analysis, Grammatical.

SERVIA, a dependency of Turkey, having an area of 16,817 square miles, and a population of about 1,338,000. The large majority of the inhabitants belong to the Servo-Croatian branch of the southern Slaves, and are members of the Greek Church.

Educational Legislation.—Fifty years ago, Servia had no public primary schools, but owing to the interest taken in the cause of education by the ruling house of Obrenovitch, and by the Skupshtina, the national assembly, elementary instruction has, of late, made considerable progress. The public-school system is under the control of the ministry of education, composed of the minister, a chief of section, 4 secretaries and 3 actuaries. The four secretaries, with the chief of the section, form a school board which is presided over by the minister, and publishes all school laws and regulations.

Primary Schools.—The primary schools are immediately subject to the chief of the district. The next highest authority is the prefect of the circle, the minister being the highest. Education is compulsory, and is free to all, in the highest as well as in the lowest schools. Every teacher who has served ten years, and has become unfit for further service, is entitled to a pension equal to 40 per cent of his salary, and each additional year entitles him to an increase of 2 per cent. After 35 years' service, he receives his entire salary as a pension. The salaries of teachers are the same in large and in small communities, being about $250 a year. In 1874, there were 517 public schools, with 650 teachers and 23,278 pupils. Most of the schools have, thus far, had three classes; but a law, passed in 1875, provides that in future all schools shall have four classes. The number of private schools is small. A normal school was established, in 1872, at Kraguyevatz, which, in 1873, had 59 pupils.

Secondary Instruction.—Secondary instruction is under the immediate control of the minister of education. The secondary schools comprise gymnasia, sub-gymnasia, real schools, and sub-real schools. The gymnasia and real schools had, in 1875, five classes, the sub-gymnasia, four or three; and the sub-real schools, two. In 1875, the Skupshtina passed a law, providing for the establishment of a real school in the capital of each circle. In 1873, there were 2 gymnasia and 5 sub-gymnasia, with an aggregate of 72 teachers and 1,323 pupils, and 1 real school and 8 sub-real schools, with an aggregate of 40 teachers and

436 pupils. There is, also, for the instruction of girls, one secondary school, with 238 pupils.

Superior Instruction. — The high school in Belgrade, the only institution for superior instruction, is, like the secondary schools, under the direct control of the minister of education. It had, in 1873, three faculties,—of law, technology, and philosophy, with 19 teachers and 207 students. All the lectures are public, and no fees are charged.

Special and Professional Schools.—Special instruction is imparted in a school of forestry and agriculture, a theological seminary of the Greek Church, an artillery school, and a military school.—See *Chronik des Volksschulwesens*, 1873, 1874, and 1875.

SETON, Samuel Waddington, eminent as a philanthropist and educationist, particularly in connection with the public schools of the city of New York, was born in that city Jan. 23., 1789; and died in the same, Nov. 20., 1870. His father was the first president of the Bank of New York, then the second banking-house in the country. By the decease of both his parents, he was left an orphan at an early age. After receiving an academic education, he entered upon a commercial life, and, aided by John Jacob Astor, he made a trading voyage to China. This was unsuccessful; and, on his return to New York, in 1807, he obtained an appointment in the Bank of New York, where he remained some years. In 1823, he was elected by the Public School Society a trustee of the schools; and, in 1826, at considerable pecuniary sacrifice, he accepted the appointment, from the board of trustees, of agent of the society, virtually, superintendent of the schools, the duties of which position he discharged until the dissolution of the society, in 1853. In 1854, he was elected by the Board of Education of the city an assistant superintendent, in which office he continued until his death. He also took great interest in Sunday-school instruction, having had, at the time of his death, the charge of a Baptist Sunday-school (though himself an Episcopalian) for 50 years uninterruptedly, during which period, it is said, he was absent from his self-imposed duty only twelve Sundays, and this in consequence of sickness or absence from the city. Mr. Seton was peculiarly qualified for his duties as a superintendent of schools — particularly primary schools, by his gentle, loving spirit, his sympathy with children, and his ardent zeal in behalf of early education. This subject he had studied with the deepest interest; and his suggestions were eminently wise and practical. In this work, he was the active associate of Josiah Holbrook (q. v.) and Joseph Curtis (q. v.), as well as many others, whose efforts, at that time, were given to improving the methods of common-school instruction. His *annual reports* are replete with valuable information for teachers of young children. His philanthropic zeal was not confined to the schools, but extended to all the poor and helpless within his reach. Few lives have been so strongly marked by purity and disinterestedness of character and active beneficence; and, having never married, he was able to devote himself wholly to his benevolent efforts to improve the condition of his race. He was a fertile and tasteful writer both in prose and verse — the latter only for children, many of his poems still surviving as models of the kind. He was also singularly effective in his addresses to the young, mingling information, impressed with the quaintest and most humorous of illustrations, with passages of the most touching pathos. His dying request breathed the spirit which had pervaded his life of over fourscore years, — "Bury me among the children!"—and, accordingly, his grave was made in the center of the children's plot, in Greenwood Cemetery, over which a monument was erected by the public-school teachers of the city, bearing the appropriate epitaph: *Peace!* —See Bourne, *History of the Public School Society* (New York, 1870).

SETON HALL COLLEGE, at South Orange, N. J., under Roman Catholic control, was founded at Madison, in 1856, removed to its present location in 1860, and incorporated in 1861. It is supported by the fees of students, the charge for tuition, board, etc., being $400 a year. The library contains 8,000 volumes. There is a commercial, a preparatory, a collegiate, and a theological department. In 1875—6, there were 15 instructors and 140 students, of whom 39 were in the theological department. The presidents have been the Rt. Rev. B. J. McQuaid, D. D., 1856—68, and the Rt. Rev. M. A. Corrigan, D. D., since 1868.

SEX IN EDUCATION. See Co-Education.

SHAW UNIVERSITY, at Holly Springs, Miss., founded in 1870, is under Methodist Episcopal control, and is supported by the Freedmen's Aid Society of that Church. It was designed especially for colored youth, but is open to all without distinction of race or sex. It has an English, a normal, a preparatory, a collegiate, a theological, and a law department. Tuition, except in law and music, is free. In 1875—6, there were 8 instructors and 113 students (38 of the collegiate grade). The presidents have been the Rev. A. C. McDonald, 1870—74, and the Rev. W. W. Hooper, since 1874.

SHAW UNIVERSITY, at Raleigh, N. C., founded in 1865, and chartered in 1875, is under Baptist control. It is supported by a small charge upon the students, and by contributions from friends in the North. It was especially designed for colored youth; but none are excluded on account of race or sex. The university has an elementary, a normal, a collegiate, and a theological department. In 1875—6, there were 8 instructors and 236 students. The Rev. H. M. Tupper, A. M., is (1876) the president.

SHURTLEFF COLLEGE, at Upper Alton, Ill., under Baptist control, was established as Alton Seminary, in 1832, and chartered as Alton College, in 1835. Soon after its establishment, the Rock Spring Literary and Theological Seminary, organized in 1827, and likewise under Baptist control, was removed to this place, and merged in this college. The Rev. Hubbell Loomis, who was the principal of the seminary from 1832 to 1835, contributed largely to the establishment of the college, which, by virtue of its origin in 1827, is claimed to be the oldest institution of the kind in the Mississippi Valley. The name was changed, in 1836, in honor of Benjamin Shurtleff, M. D., of Boston, who had donated $10,000 to the institution. It consists of an academic and preparatory department, the college proper, and a theological department. Students of both sexes are admitted to the college, as well as to the academic and preparatory department. The college has a classical and a scientific course of four years each, and a three years' Latin course. It has an endowment of $125,000, and its libraries contain 10,000 volumes. The cost of tuition ranges from $36 to $48 a year; but in the theological department it is free. Ministerial students are assisted by the Illinois Baptist Education Society. In 1875—6, there were 12 instructors and 189 students (deducting repetitions), namely: theological, 6; collegiate, 54; preparatory and academic, 131. The presidents of the college have been as follows: the Rev. Washington Leverett, A. M., 1835—41; the Rev. Adiel Sherwood, D. D., 1841—5; the Rev. Washington Leverett, A. M., again, 1846—9; the Rev. Norman N. Wood, D. D., 1850—55; the Rev. S. T. McMasters, LL. D. (*pro tem.*), 1855—6; the Rev. Daniel Read, LL.D., 1856—71; and the Rev. A. A. Kendrick, D. D., since 1872.

SICARD, Roch Ambroise Cucurron, abbé, a French philanthropist and teacher of the deaf and dumb, born in Fousseret, September 20., 1742; died in Paris, May 10., 1822. He was educated for the ministry, at the university of Toulouse, and was made vicar-general of Condom and canon of Bordeaux. Having received instruction from the abbé de l'Épée, he opened a school for deaf-mutes in Bordeaux, in 1786; and, three years after, succeeded his teacher in the management of a private school of that kind, which the latter had opened in 1760. Two years after, he succeeded in causing its adoption by the government. It is now known as the Imperial Institution of Paris. Owing to his connection with the church, he became an object of suspicion to the revolutionists, in 1792, and was thrown into prison, barely escaping with his life. He was afterwards banished. In 1815, he made a visit to England, taking with him his pupils Massieu and Laurent Clerc, the latter of whom formed the acquaintance there of Dr. Gallaudet, whom he accompanied to the United States in 1816. The distinctive work of the abbé Sicard was his enlargement of the resources of the deaf-mute language taught by De l'Épée by the addition of signs for metaphysical ideas. He constructed an elaborate analytical system of visible signs, for the purpose of conveying to deaf-mutes the functions and relations of words in sentences, and thus succeeded in making them acquainted with the principles of grammar—an achievement which, from its ingenious and imaginative methods, secured for him the title of "the painter of syntax and the poet of grammar." His principal works are *Théorie des Signes* and *Cours d'Instruction.* (See Deaf-Mutes.)

SIGNS, LANGUAGE OF. See Deaf-Mutes, and Peet, H. P.

SIMPSON CENTENARY COLLEGE, at Indianola, Iowa, founded in 1867, is under Methodist Episcopal control. It is supported by tuition fees ranging from $24 to $30 a year, and by the income of an endowment of about $70,000. It comprises a preparatory department and a collegiate department, with a four years' classical course and a three years' scientific course. Facilities are afforded for instruction in music, telegraphy, book-keeping, penmanship, phonography, and Hebrew. Both sexes are admitted. In 1875—6, there were 16 instructors and 259 students (under-graduates, 60; preparatory students, 169; pursuing special studies, 30). There is also, at Des Moines, a law department (the Iowa College of Law), organized in 1875; and a medical department is about to be organized there. The Rev. Alexander Burns, D. D., has been the president of the college since its foundation.

SIMULTANEOUS INSTRUCTION. See Concert Teaching.

SINGING-SCHOOLS. From the days of St. Ambrose and Gregory the Great to the present age, singing-schools and classes have existed, for purposes of instruction in elementary vocal and choral exercises. Chiefly through the efforts of ecclesiastics and choirs of an earlier period, those substantial and permanent forms of church music,—the single chant, the hymn, and the choral, have been preserved to warm and enliven the sacred services of a later time. There was, undoubtedly, a very strong and direct effect produced through the instrumentality of men and boys, uniting their voices within a limited compass, associating their music with words of solemn and living import, and uttering their hymns of praise under the direction of a religious leader. Guido Aretino (1020 A. D.) must have perceived the necessity of a certain order in conducting the musical exercises of his classes, since portions of his method have lasted eight centuries; the staff, completed to nearly its present state, and the syllables *Ut, Re, Mi, Fa, Sol, La, Si,* improvements of his and introduced under his immediate eye, being still in full and vigorous use. The Reformation, with Martin Luther for one of its musical as well as one of its ecclesiastical guides, gave the choral and the special hymn to all the people. Subsequently, not only Germany, but Great Britain, and the United States of America, greatly encouraged the cultivation of vocal music, in its higher relations, among all classes of people. It is the opinion of some, however, that the people of the United States are a century behind the more powerful and influential of the European nations in a systematic fostering of the science and art of music by the state; but, through the more general diffusion of knowledge by means of schools, the press, and other agencies, the individual efforts of Americans are widespread, toward imparting a more thorough understanding of that which is, to the vast majority of people, an unknown language; namely, the secret of the independent reading of vocal music with facility.

The origin of the staff, and the use of the syllables *Ut, Re, Mi, Fa, Sol, La, Si*, seem to have been nearly contemporary. These, together with the clefs, notes, and chromatic signs, constitute the written language of music as recognized by every civilized country; and it is not possible to change them for the letters only, valuable as these are in certain relations, without disastrously revolutionizing the whole written system of modern music, and all its magnificent accessories. Large numbers of most valuable works upon harmony, counterpoint, and orchestral effects have been written, besides innumerable scores, with all of these well known musical signs, and with the employment of the syllables *Ut, Re, Mi*, etc., as denoting absolute pitch constantly in view; and to reduce them to the dimensions of lettered signs simply, and require singers and players to translate them into music agreeable to the ear, would be an interminable and tedious task. The modern Italian method of presenting the scale through the familiar syllables *Do, Re, Mi, Fa, Sol, La, Si*, has the merit of being direct and of appealing to the ear; and it is, also, quite unique, since the syllables are at once the vehicles of variations of sound required in rendering the scale, and the signs denoting absolute pitch, like the letters to the Germans and to the English. So that, by this method, the pupil has to remember only one particular syllable, either in naming a key-note or in singing it. To the Italians and to the French, and to very many others who have been taught by this method, this association of a certain syllable with a certain key-note, that particular syllable being the very vehicle for the production of the *tone* desired, is deemed, in many respects, an advantage. The fixed and immovable *Do* becomes the middle C of the system. All other *tones* of that octave, diatonic and chromatic, revolve around it, as the planets around the sun. The major scale, with its intermediate *half-tones*, becomes the nucleus of the entire tonal system. In exact proportion as the scholar acquires a thorough knowledge of the scale, by regular degrees, by intervals small and large, by chromatic as well as by diatonic progression, and by all the varieties of melodic and harmonic effect of which it is susceptible,will his succeding study be made satisfactory and available. Multiply this knowledge of the resources of one scale within the compass of one octave by twelve, the number of independent key-notes included within the limits of the chromatic scale, and thereby are obtained the changes of progression possible in all the twelve keys, in the circle of harmony, through the transposition of the key-note. Now this may seem complicated to the uninitiated: but it is quite clear to all who have mastered the changes obtainable within the compass of one octave, and afterward have learned the rule of transposition to the succeeding eleven keys. This, indeed, is the first direct business of the faithful musical instructor and his pupils. There is no escape from traveling this well-known and well-beaten road, if accuracy and a full comprehension of the groundwork of music be really desired. In schools where the very tender age of the pupils hardly admits of any extended course of vocal musical instruction, it is now positively ascertained that the association of the sounds of the major scale with the numerals 1, 2, 3, 4, 5, 6, 7, 8, is of direct and permanent use. Practicing fragments of the major scale, ascending and descending, by regular degrees and in wider intervals, with frequent recurrence of the key-note 1 or 8, and unisonant passages, has the effect of locating the sounds of the scale in their exact order, and immediately secures the attention and the active participation of the pupils, because the order of the numerals is already familiar to them; and, in this way, each sound of the scale becomes gradually associated with its corresponding numeral. If to the use of the numerals be added that of the syllables *Do, Re, Mi, Fa, Sol, La, Si*, which are more musical in themselves than the numerals, there are obtained three indicators of the different sounds of the scale; namely, the *letters*, the *numerals*, and the *syllables*, all of which are useful for special purposes: the letters, for denoting absolute pitch and the location of the key-notes, changeable only with the clefs; the numerals, for drilling in the plain sounds of the scale, and ultimately for practical use in the study of harmony, *one* and *eight* being used as key-notes in one or all of the twelve keys; and the syllables, for *sol-faing*, used according to the Italian method, C being always the fixed and immovable *Do*. It is at this point that this Italian method, which recognizes the syllables as necessary indicators of absolute pitch, and at the same time as necessary in *sol-faing* for the production of an equable and yet varied effect, differs from three other methods which are in extensive use: (1) from that of the Germans, who, with a special name for every plain sound of the scale, and for every augmented or depressed interval thereof, rely chiefly upon vocalizing with different vowels to secure accuracy in all chromatic as well as diatonic progressions; (2) from that of the United States, which quite generally, but not entirely, employs a movable *Do* as the starting-point or key-note of the major scale, the key-note for any relative minor becoming *La*; and (3) from that of the Rev. J. Curwen, the success of whose method in England has been quite remarkable,—a method, which is identical with that so extensively practiced in the United States, in the use of a movable *Do*, but which substitutes the syllable *Te* for *Si*; the names of Mr. Curwen's syllables being *Doh, Ray, Me, Fah, Soh, La, Te*. This method of *lettered* and *numeral* abbreviations, as substitutes for the staff, clefs, chromatic signs, bars, measures, and time-table of the present musical sign-language will be more minutely considered further on.—To return to the two methods which are chiefly employed in the United States, it is, really, very important to the beginner that he adhere to one method until it is thoroughly acquired. It is the united testimony of experienced teachers of vocal music that good readers are educated by both of these methods, provided the teacher begins, continues, and ends the work of strict reading by adopting only one method at a time. The pupil may afterward become acquainted with all other methods, and with advantage; since subsequent experience will enable him to test the merits of the method which he most thoroughly understands, and which he can make most effective. To attempt to teach, or to learn, both methods at the same time, produces a confusion of associations, and a consequent bewilderment, which should be avoided. It has been the experience of the writer to be required to teach contemporaneously according to both of these methods; and while it must be admitted that the method which retains the immovable *Do* has a unity and consistency which demand time for their thorough appreciation and practical use, it is easier, in the first stages of instruction, to change the *Do* with each successive key-note of the entire twelve. By the former method, *Do* is invariably associated with a certain letter and a certain line or space; by the latter, *Do* becomes the key-note, or numeral *one* or *eight*, of every one of the major scales.—One or the other of these ways of using the syllables being accepted, the natural and ordinary divisions of elementary vocal teaching into those of *tune*, *time*, and *expression* present themselves; *tune*, or *melody*, addressing itself more directly to the soul than *time* or *rhythm*, is certainly first in order in the musical education of the young. By common consent, the major scale, in great variety, is now practiced with numerals and with syllables in the primary departments of schools, as a preparation for the presentation of the staff, clefs, notes, etc., at a later period. It is a matter of no consequence whether the scale be based upon one particular line or space in preference to another, if the movable *Do* be used; but if it be the teacher's design to employ the Italian method, with its *Do* immovably fixed upon middle C, it is conducive to a clearer understanding of the subject of the *transposition* of the key-note to start from this point. If another letter be selected as the base of the scale in the earlier lessons, it is necessary to return to middle C when the subject of *transposition* is introduced, and the ordinary rules for changing the place of the key-note by help of the sharps and flats, are fully explained. After some familiarity with the sounds of the major scale is acquired, a division of the class should be made, whereby singing in two parts can be attempted. This phase of elementary vocal instruction may be postponed, in teaching children, until a considerable knowledge of the diatonic intervals of the major scale has been made familiar to them. With adults, however, the natural division of the class of mixed voices arising from the selection of the soprano, alto, tenor, and base voices, each to sing in a compact body, and in a separate location, is obviously necessary as a measure of interest and advantage to all four of these parties, after the quality of tone and compass of each voice have been ascertained. Beating time should be introduced and rigidly enforced as soon as the staff and its division into measures by bars have been explained, especially in the simpler forms of twofold, threefold, and fourfold measure. The department of *expression*, with its more apparent varieties of *f*, *p*, *mf*, *legato*, *staccato*, — - — . . and >, may accompany the performance of the simplest exercises, and grow with the growth and strengthen with the strength of the pupil as he advances toward the execution of more elaborate examples in *melody*, *rhythm*, and *harmony*. They who clog the wheels of musical progress with dull and incompetent ears must gradually disappear. This is a rule without exception.

Allusion has been made to the success of the Rev. J. Curwen's *Tonic-Sol-Fa* system in England, of which Miss Sarah A. Glover, with her so-called *tetrachordal method*, was the forerunner. It is claimed that it is better suited for vocal practice than the ordinary signs, and many of Mr. Curwen's disciples consider it available for the presentation of every possible variety of music, instrumental as well as vocal. The syllables *Do*, *Ray*, *Me*, *Fah*, *Soh*, *Lah*, *Te*, are pronounced as they are spelt, *Te* being substituted for *Si*, to avoid confusion with *Soh* when only the initial letter is used, as in the printed music the initial only is employed. To indicate the higher or lower octaves, figures are placed by the sides of the letters which stand for notes, as d^1, d^2, m^3, and S_2, M_2, d_2. The tune *America* is presented thus: | *d d r* t_1 *d r m m f m r d r d* t_1, *etc.* Different key-notes are announced by letter at the beginning, as key G, key A, etc. The key-note of the relative minor is always *Lah*. Changes of key are effected by what are called *bridge tones*. The note, or rather the letter indicating a certain sound, is placed side by side with the letter indicating the pitch of the letter in the key approached; and pupils are taught to think and sing the sound of the first note or letter, and to call it by the name of the second. Thus *d r m f st t d* would show a modulation to the key of G. *Tonic-Sol-Faists* consider that this affords an easier mode of making modulations and transitions than the older system. The chromatic scale is named by adding the vowel *e* to the initial of sharped notes, and *a* (aw) to flatted notes. Thus *de*, *re*, *fe*, *se*, are respectively *d*, *r*, *f*, *s* sharp; and *ma* (maw) *la*, *ta*, *m*, *l*, *t* flat. The sharp or augmented sixth of the minor scale is called *bah*, to distinguish it from *fe*, the sharp or augmented fourth of the major scale. Time and accent are indicated by measurement across the page, thus:

| : | : | : |

the space between one sign and the next representing the beat; the line showing the stronger accent, and the colon the weaker. Short divisions are indicated, on halving the measure, by one dot | . : and commas are used to divide the measure into quarters, and other divisions are similarly shown. A stroke, through a beat or pulse, means that a previous sound is to be continued. *Sol-Faists* esteem this mode of measuring time a great advantage over the older notation. The first line of Pleyel's hymn is thus written: | *m* : *s* | *r* : . *m* | *f* : *r* | *m*, etc.

The method cannot easily be understood without reference to the *Tonic-Sol-Fa* arrangement. *i. e.*, the distinctive plan of teaching the musical facts indicated by the lettered notation. It is the result of laborious inquiry and experience on the part of Mr. Curwen and his fellow laborers. Great importance is attached to the doctrine of what is called *mental effect*, but which has been previously named more properly *emotional effect*, by which is meant a certain coloring or impression produced by each sound of the scale when sung slowly. Thus *doh* is considered firm; *te*, sharp and piercing; *lah*, sorrowful; *fah*, gloomy; *soh*, bright and clear, etc. Teaching by pattern is also required; the scale is taught in the following order: (1) the notes of the tonic common chord *d*, *m*, *s*, or *doh me soh*, and their replicates; (2) the notes of the dominant common chord *s*, *t*, *r*, or *soh*, *te*, *ray*; (3) the common chord of the subdominant *f*, *l*, *d*, or *fah*, *lah*, *doh*, — which are simply the fundamental harmonies of the scale, embracing all its sounds, and giving birth to the name of the system, *Tonic-Sol-Fa*. The backbone of the system, however, is the *Modulator*, without a proper use of which the method cannot be taught.

r^1	s	d		f^1				
		t	—	m	—	l —	r^1	s
d^1	f							
t	m	l	=	r^1	—	s	d^1	f
							t	m
l	r	s	—	DOH^1	—	f		
				TE	—	m	l	r
s	d	f	ta	la				
	t_1	m	—	LAH	=	r	s	d
f			la		se			t_1
m	l_1	r	—	SOH	—	d	f	
			ba		fe	t_1	m	l_1
r	s_1	d	—	**FAH**				
		t_1	—	ME	—	l_1	r	s_1
d	f		ma		re			
t_1	m_1	l_1		**RAY**	—	s_1	d	f
l_1	r_1	s_1		DOH	—	f	t_1	m_1
				t_1	—	m	l_1	r_1
s_1	d_1	f_1						
	t_2	m	—	l_1	=	r_1	s_1	d_1
f								t_2
m	l_2	r	—	s_1	—	d_1	f_1	
						t_2	m_1	l_2
r	s_2	d_1	—	f				
		t_2	—	m_1	—	l_2	r_1	s_2

This Modulator is a map of the musical sounds to be read in an ascending order, showing the scale, its minor, its chromatics, and its more closely related keys or scales. By familiarity in the use of this chart, the upward and downward motion of the notes all on one level, is gradually learned by the pupil. Syllables are used to show the length of the notes according to the French Chève system. So *taa* is the name of one beat, *taa-tai* of a half-beat, and *ta-fa-te-fe* of quarter beats. Continuations of any kind are met by dropping the consonant. *Sol-Faists* consider that the more intricate and refined of divided beats can be sooner learned in this way than in any other. But this *Tonic-Sol-Fa*-method, more than any other, requires the living teacher to illustrate the meaning of its signs; and it follows, of course, that the teacher of any particular method of imparting musical instruction will best succeed with that which he most thoroughly understands.

SMITHSON COLLEGE, at Logansport, Ind., founded in 1872 for the education of both sexes, is under Universalist control. It is supported by tuition fees and the income of an endowment of $20,000. The regular tuition fee is $30 a year. The institution comprises a preparatory, a commercial, a philosophical, a collegiate, and a normal department. In 1876—7, there were 8 instructors and 50 students. The presidents have been the Rev. Paul R. Kendall, 1872—4, and the Rev. R. N. John, since 1875.

SOCIAL ECONOMY. The place actually held by the science of social or political economy, in modern education, presents a strange contrast with that which its importance demands. If the object of education is to fit the young to become self-supporting citizens in a progressive society, conducing at once to the happiness of all, while securing their own, then must the science whose special function is the elucidation of the conditions of man's well-being in society, rightfully claim a foremost place in every school curriculum. It is, nevertheless, to be noted that, up to the present time, instruction in this science has been limited to the few who attend colleges and universities, and to the pupils of a small number of schools, of which further mention will be made in the course of this article. A part of the difficulty popularly experienced in appreciating the proper position of this subject in the course of study appropriate to youth, is probably to be ascribed to the name, or rather to the different names which have, from time to time, been given to the science. The most appropriate term of the many which have been suggested, will be found, on examination, to be that under which the subject is here treated,—that is, the science which treats of the manner in which are regulated the affairs that relate to man in society, a meaning fully suggested by the etymology of the words. Nevertheless, this term, as well as the allied name *political economy*, is apt to suggest to the unprepared mind a science dealing with a very different set of ideas from those of which it treats.—The dissatisfaction which has thus arisen with the name *social economy* has led to the attempt to adopt various other forms of expression to designate the science, of which attempts the happiest perhaps has been the proposal to call it the "science which teaches the conditions of human well-being." But this title is not without objection. In the first place, it is wanting in that terseness which is a main requirement in nomenclature; and, secondly, it is wanting in precision. This expression would logically include many other sciences; as, for instance, hygiene, a due regard to the laws of which is assuredly a condition of human well-being. If the science had to do solely with the production and distribution of wealth, the term originally employed by Adam Smith, the father of the science, namely, *the wealth of nations*, would be specially appropriate; but, even this is inadequate; for, although the laws of the production and distribution of wealth influence in a material degree the conditions of human well-being, the science which we have called *social economy* includes also most of the moral elements that enter into the economy of society. The diversity of names that, from time to time, have been suggested, has, not unnaturally, given rise to the idea that there must be something especially abstruse in a science the professors of which have been unable to agree even upon the name by which it should be known. The difficulty probably arises from the modern use of the term *economy*, which has, to some extent, lost its original and etymological signification. Another cause of the misapprehension of the proper place of social economy in education, arises from the intimate relations into which every person unavoidably enters with the subjects it elucidates, at nearly every instant of his industrial life; so that all persons are unavoidably possessed of some notions on the subjects of which it treats. Now, as there is an infinite number of modes of error and only one of truth, it is only by starting rightly, and proceeding, systematically or scientifically, from the known to the unknown, that error can be avoided; hence, the notions taken up in the course of practical life are, in the absence of systematic study, generally erroneous. But it is usually the most ignorant who wrangle and dictate with the loudest assumption of knowledge; and, hence, people are led to suppose that there is a difference of opinion on economic truths among the students of the science, and that, therefore, the subject must be too difficult to be understood by children. It is, nevertheless, true that, as far as regards the elements of the science, there is no more difference of opinion among those who have given systematic study to it, than there is among the students of mathematics upon the elementary principles of geometry. Another and more serious obstacle to the introduction of social economy, as a subject of instruction for the young, is the following. Owing to the extremely complex nature of human society, it is impossible to take all of its factors into account when investigating its elementary principles. But it is also true that the geometrician disregards the breadth of the line, and the mechanician the weight of the mechanical powers, when investigating the laws of magnitude in space, or the relations of forces; but as soon as the geometrician or the mathematician begins to apply the principles of his particular science to practical engineering, these discarded factors form *data* in his problems; and their effects are estimated by means of the very laws which were established while disregarding their existence. So with the laws of man in society. The laws of the production and distribution of wealth were investigated by rigorously excluding the sympathetic side of man's nature and looking upon him as purely a self-seeking being; but the principles of social economy can only be understood by regarding him from both points of view. This was well understood by Adam Smith, whose *Theory of the Moral Sentiments* treats of man as a sympathetic being, and is complementary to his *Inquiry into the Wealth of Nations*. Most of the followers of this great master, have, since his time, lost sight of the fact of this artificial exclusion, and while pursuing with great zeal and intelligence their researches into the one half of the subject, have forgotten that, after all, it was but one half, and that the other half, which they neglected, was of little less moment to man's happiness than that which they were investigating. It was, in great part, owing to this forgetfulness on the part of the votaries of the science, that it acquired, among persons of large sympathy but small knowledge, the nickname of the *dismal science*; and as the investigation of the self-regarding half of the laws of human well-being, divorced from the sympathetic, would be apt to chill those sentiments of generous sympathy with our kind which, in youth, should be encouraged rather than suppressed, a not unnatural disinclination was felt to fortify the self-regarding side of our nature by exhibiting it to the young as the basis of a science on which to build up the structure of human well-being. This well-grounded objection has been removed by the correlation of these two aspects of our nature into one body of science, — a correlation first illustrated by the teachings of William Ellis, which has been more or less successfully followed up by his disciples; so that, to-day, the science, when properly taught, instead of warping the minds of its students into a one-sided egoism, develops a largeness of views, a generosity of sentiment, and a soundness of judgment perhaps unattainable through any other study.—All educators have agreed that the earlier years of youth must be directed to concrete, before proceeding to abstract, studies—to observation rather than to causation. While, speaking generally, this rule is sound, it is not to be understood as requiring the exclusion of the reasoning process from even infant minds; but, because the reasoning faculties are comparatively dormant in early youth, knowledge should be obtained through observation (as for instance in natural history); and from the facts thus obtained the child should be trained to reason logically. Now, for this purpose, social economy presents many advantages, and this hardly less as a mental discipline than for the knowledge it imparts. But the teaching of science to the very young should always be in connection with facts or subjects presented to the senses. For instance, suppose a lesson is to be given upon *bread* to children 8 or 9 years of age. After the children have observed those properties which are directly cognizable by the senses, the judicious teacher will proceed to the more elementary of those facts relating to it which physics, chemistry, and physiology have made known to us, and will not shrink from gradually introducing the pupils, nothwithstanding their youth, to the terms used by men of science in speaking of those facts. Instruction of this kind has, for a long while, been given by the best teachers, in what are termed *object lessons;* and they have now only to add the facts relating to bread which are made known to us by the science of social economy to complete their course. They will find it far easier to adopt this course with the social bearings of objects than with those which relate to physics, chemistry, or physiology, because many of the social facts will have been spontaneously and unavoidably noticed by the children themselves; and when once they perceive that what goes on around them at home, in the workshop, and in the store, has a scientific value and importance, and that an observation of surrounding facts and events can be used in school work, and have a fitting place found for it, as a help to further knowledge, their observation will be suddenly and wonderfully awakened, and fresh facts and events will be poured upon the teacher by the children themselves. By this method, long before children have passed out of the primary grades, they may have acquired a knowledge of not only the fundamental laws of the production of wealth, but morals also, as well as many of the consequences of the division of labor, and other matters connected with the interchange of commodities. At an age even earlier than that at which it is now deemed proper to commence the study of geometry, that is to say, 11 or 12 years, social economy may be taught as a special subject; but the opportunities afforded by object lessons, of observing the social aspects of the objects under consideration should always be made available. In teaching social economy, as a special branch, to scholars of from 11 to 12 years of age, the subject should, as far as possible, be introduced in a manner analogous to that of object teaching. Attention should be called to the comforts enjoyed by the children, and by people in general, in the country in which they live,—things to which they have perhaps become so accustomed that they have given no thought to the means by which they have been provided at the time and place at which they are needed to be used and enjoyed. With children who have not before received any instruction in the science, some simple object of their daily use should be noticed, and its history examined, from the first preparation for the production of the raw material of which it is mainly composed, down to its distribution in the form in which it is required to be ready for their consumption. Such an examination will bring vividly before the minds of the pupils the fact that nearly all the necessaries and comforts of life are produced by labor; and then the name *wealth*, by which these products of labor are to be thenceforth denoted, may be given to them. *Industry*, *economy*, *knowledge*, and *skill* will next be evolved as necessary to individual as well as general well-being; and the division of labor will be examined, with its resulting enormous increase in the productiveness of labor. The opportunity should then be taken to exhibit the groundlessness of prevailing prejudices in regard to the relative honor to be attached to one class of labor over another, and to point out that those by whom household labors are performed are as much engaged in the business of production as other laborers. The pupils will now be ready to observe with understanding the simpler phenomena of interchange; and then the paramount importance of honesty, truthfulness, and thorough trustworthiness on the part of all will be evolved and made apparent.—While carefully avoiding all appearance of dogmatism, the teacher can hardly devote too much time to multiplying illustrations, and reviewing the investigations of the pupils, upon this head. The various forms of untrustworthiness, and the consequences thereof, should be made very clear, nor should the subject be left until the pupils have arrived at a hearty detestation, not only of unsuccessful, but still more of successful, dishonesty. The natural laws regulating the relations of *employer* and *employed* will next be studied; and, either now or at a later period, the rules of trades-unions, and the effects of strikes and of combinations, should be closely examined; nor should the subject of *wages* be left until the pupils see clearly, that the wages which they, as sellers of their labor, are destined to earn, will depend almost exclusively on the productiveness of their labor, and that all those rules of trades-unions etc. which tend to diminish the productiveness of labor, of necessity, lower also the wages of labor. The laws determining the administration of *capital* will next engage their attention; the idea of *profit* will be evolved, and its nature determined with precision; the mischievous results of combinations among capitalists, both to themselves and to the community, will be investigated, until it becomes apparent that the profit of the capitalist is the reward paid him by society for the services he has rendered, of which services it forms also, in most cases, an accurate measure.—*Property in land* will next claim attention, the justification for its adoption, as well as its just limitations, being ascertained, and the principle of *rent*, determined.—As the next step in the course of study, the idea of exchangeableness, and the name *value*, will be evolved. The laws which regulate value will then be investigated, and the necessity of precision, alike in ideas and in the use of words, will be again impressed upon the minds of the pupils, and forcibly illustrated by as many examples as possible. It will now be time to examine into some of the means which have been adopted to facilitate interchange, among which *money* will be seen to hold a prominent place; the reasons for selecting gold or silver for money will be examined; the impossibility of fixing the relative values of the two metals, and, consequently, the want of wisdom shown in enacting laws making both metals a standard of value for the same contract, will be readily perceived; nor will it be difficult for the pupils to discern the only proper function to be fulfilled by a mint. The causes of fluctuations in the value of money will be next investigated, and the phenomena of *price* and its fluctuations observed. The use and functions of *credit* will now be inquired into, and the unhappy consequences of its abuse traced to their source. Now, or at a later period in the course, the causes of the so-called "tightness in the money market", of business derangements, commercial crises, and of panics, will be rigidly investigated and their only remedy discerned, namely, greater trustworthiness and honesty, to be secured by the improved teaching and training of youth. The policy of laws for the recovery of debts may now be profitably inquired into, as also the function which, at best, governments may hope to perform in the economy of society.—*Bills of exchange*, *rates of exchange*, the *par of exchange* between distant countries, *rates of interest*, *banks* and *banking*, may all now, in turn, be discussed, and the want of wisdom shown by legislatures in the enactment of usury laws, and of laws which attempt to control or regulate banking, may be made apparent. Paper money, and the promise made by the issuers thereof, the dishonesty evinced in breaking the promise thus made, and the duty incumbent upon those who have either dishonestly or ignorantly broken such promises, should be dwelt upon, and illustrated by examples drawn from history. *Foreign commerce* may next be illustrated, its origin and the cause of its existence observed, and the want of wisdom shown by those legislatures which have attempted arbitrarily to interfere with it.—The proper mode of raising *revenue*, to be deduced in great part from the truths discovered when considering the phenomena of *rent* and of its progressive increase, will next be investigated; and the wisest methods of expenditure, both public and private, may then be discussed.—With the consideration of all these questions, and mainly in the order in which they are here sketched, the school course of study in social economy may be closed. Not, however, without warning the pupil that he has, by no means, mastered all the truths of the science, but that, if he has thoroughly assimilated the lessons he has received, they will suffice to direct his path in industrial life.—The course as sketched in these pages should occupy from two to four years of the school curriculum,—two years, if the knowledge to be acquired is to be learned from books; but about four years, if the *Socratic method* be adopted by the teacher. Another method of instruction, and one which, like that already indicated, has been successfully practiced, is the division of the science into progressive problems, demonstrating these either on the Socratic plan or by a deductive process, as in the study of geometry. The former of these two plans is that chiefly followed in the admirable Birkbeck schools of London, schools founded and endowed by William Ellis (q. v.), of that city, for the special purpose of introducing the science of social economy as a branch of school teaching, especially for the children of mechanics and laborers. Since the year 1848, this instruction has been continued in these schools, and their example has, at last, been followed by the London school board.— See ELLIS, *Outlines of Social Economy* (a text-book for schools); *Progressive Lessons in Social Science* (for teachers); *Introduction to the Study of the Social Sciences* (London); *Philo-Socrates* (London); *Lessons on the Phenomena of Industrial Life, etc.*, edited by the Dean of Hereford (London); J. J. CHAMPLIN, *Lessons on Political Economy* (N. Y.); M. R. LEVERSON, *Common Sense, or First Steps in Political Economy* (N. Y. and Denver, 1876).

SOCRATES, a celebrated Greek philosopher and teacher, born in a village near Athens, about 469 B. C.; died in that city 399 B. C. He was trained in his father's art, that of sculpture, and pursued it for several years. At the same time, he devoted himself to study, and attended the lectures of Anaxagoras and other eminent philosophers at Athens, and gained a reputation as a man of superior intelligence. Indeed, one of his friends asked the oracle at Delphi whether Socrates was not the wisest man living, and was answered in the affirmative. This answer surprised and perplexed Socrates, who was deeply impressed with his own ignorance; but he was incited by it to continue in his career as a philosopher. In this, however, he assumed the character of an ignorant person asking for information. Accordingly, he entered into conversation with the most eminent men in Athens, particularly the Sophists; and soon was convinced that their claims to superior wisdom were without foundation. He adopted a peculiar method of questioning (since called the *Socratic method*), by which, under the guise of seeking information, he convinced the person whom he questioned of ignorance, and showed him the truth. He passed much of his time wandering about the streets of Athens in meditation, or mingling, in the school and in the market place, with people of all ages and conditions, and of both sexes, and sought to engage them in conversation, his good humor and brilliant powers as a disputant charming all classes. In his walks, he was constantly attended by a crowd of persons who were commonly looked upon as his disciples; though he never opened a school, or assumed the name of teacher. He selected, however, a few as his special disciples and companions, among whom were Plato and Xenophon; and to these he was particularly endeared. The unselfishness of his aims is shown by the fact that he never accepted payment for the instruction he gave, never sought public influence or place, and only once in his life occupied a political office; while he frequently, in the interest of justice, defied popular clamor, when acquiescence in its demands would have been to his advantage, if his designs had been ambitious. He acted constantly as if under the sense of a divine commission. He professed to hear a supernatural voice, proceeding from what he called his genius (δαιμόνιον), which exerted over him a restraining, but never an inciting, influence. His unsparing irony towards, and contempt for, the Athenian rulers, and his demonstration of the ignorance of men prominent in all walks of life, which he made plain to others by his unrivaled skill in questioning, created finally an intense opposition to him, particularly on the part of the Sophists. A conspiracy against him was formed by an orator, a poet, and a demagogue (Lycon, Melitus, and Anytus), who made a public accusation against him that his teaching had brought contempt upon the national gods, that he had sought to introduce other gods in their stead, and that he had corrupted the Athenian youth. He approached his trial in the same spirit of independence and defiance that he had always exhibited. With no expectation of acquittal, he yet defended himself to the extent of showing the falsity of the charges brought against him, and declaring exactly what his teaching had been. A court composed of citizen judges, variously estimated at 557 to 567 members, condemned him to death by a very small majority. It is thought that the fearlessness of his defense led to his condemnation, as the prosecution was intended rather to humble than to destroy him. After his sentence, he passed 30 days in prison, and ended his life by drinking poison, according to the sentence of the court. From a moral stand-point, Socrates has been considered the type of the highest virtue attainable by man when unaided by the spirit of Christianity. The immediate and inevitable product of his method, as an instrument of intellectual research, is clearness of conception— the most important prerequisite to precision of thought. The result of his teaching, therefore, was comprehensive and radical, leading to an entire reconstruction of fundamental ideas in many departments of human inquiry. The sophistry which constantly enveloped every subject, under the methods pursued by the ancients for centuries, was dissipated by his merciless questioning. The practical character of his mind, also, in regard to natural science, is remarkable, considering the age in which he lived; in this respect, forcibly recalling the similar characteristic of Franklin. Thus, he would have had the men of his time know only so much of arithmetic, geometry, and astronomy, as would be of use to them in the daily occupations of life, on the ground that the vast realm of human nature, with its characteristics and duties, was at that time unexplored, and was a more appropriate field for investigation than what he called the divine phase of philosophy, by which he meant what is now understood by speculative science. In his estimate of the proper subjects for investigation, this strongly practical bias is always apparent, insomuch that Xenophon says. "he continued incessantly to discuss human affairs," and Cicero impressively declares that "he called philosophy down from heaven to the earth." The career of Socrates as a teacher was a remarkably illustrious one. It was, also, eminently successful. Those who listened to his instructions always felt their minds enlarged, and their virtuous inclinations strengthened. Certainly, no teacher has ever presented a more complete example of what should be the aim of instruction, and none has ever employed a method so well calculated to develop in the minds of his pupils the ideas and truths which he designed to impart.—See GROTE, *History of Greece*, chap. LXVIII.

SOLON, the author of the Athenian system of education, was born at Athens in 639 B. C.; and died, in 559, on the island of Cyprus. He was one of the noblest men of his age, and was reckoned among the seven sages of Greece. A modern historian (DUNCKER, *Geschichte des Alterthums*) calls him the greatest political genius of antiquity. Having been called to the archonship, in 594 B. C., by all parties, with authority to confirm, repeal, or modify the Draconian laws, he gave to the Athenians a new constitution, which educated the people to a higher degree of culture than had been attained by any nation before that time. The eminence which Greece occupies in the history of education, is chiefly due to the laws of Solon. (For an account of the educational legislation of Solon, see ATHENS.)

SOUTH, University of the, at Sewanee, Tenn., is under the control of the Protestant Episcopal Church. It was chartered in 1858, but was not opened until 1868, its organization being interrupted by the civil war. It is situated on the Sewanee Plateau, a spur of the Cumberland Mountains, 2,000 ft. above the sea, and 1,000 ft. above the surrounding country. The university domain comprises nearly 10,000 acres. The value of its grounds, buildings, and apparatus is $150,000; the amount of its productive funds, $50,000. The library contains 6,000 volumes. The university consists of 10 schools; namely, civil engineering and physics, mathematics, modern languages and literature, theoretical and experimental chemistry, metaphysics and English literature, geology and mineralogy, ancient languages, history and political science, commerce and trade, moral science and evidences of Christianity and theology. There is also a grammar or preparatory school. The charge for tuition, board, etc., is $310 a year. In 1875, there were 12 instructors and 243 students (92 preparatory). The vice-chancellor, who is the administrative head of the university, is (1876) Gen. J. Gorgas.

SOUTH CAROLINA, one of the thirteen original states of the American Union, having an area of about 34,000 sq. m.; and a population, in 1870, of 705,606, of whom 289,667 were whites, and 415,814 colored persons.

Educational History.—The first constitution of the state was silent on the subject of education, the custom at that time being to leave elementary education in the hands of parents. In 1811, the legislature created a free-school fund, the use of which was to be confined to the poor in case of its inadequacy for all. This proviso, imparting a sort of charity phase to the state effort to promote education, has always proved an obstacle in its way by alienating from it the support of the wealthier classes. An effort was made in 1843 to revive an interest in the subject, but without permanent success. From the earliest times, the city of Charleston has been the recipient of benefactions for educational purposes, but these have been limited in amount, and their influence has not extended over the state. Good public schools, however, existed in that city previous to 1861. In 1868, a new constitution was adopted, which provided for a uniform system of public schools, to be supported by an annual tax on property and polls, for the establishment of a state normal school, a state reform school, a state university, and educational institutions for the deaf and dumb, and the blind. It also provided that all schools, colleges, and universities, supported wholly or in part by public funds should be free to the children of the state, regardless of color; but this provision, together with one compelling the attendance at school of all children in the state between the ages of 6 and 16, has been disregarded. Separate schools are now generally provided for colored children. No state superintendent of public intruction was chosen in South Carolina till 1868, when J. K. Jillson was elected. He was re-elected in 1872; and was succeeded by Hugh S. Thompson, elected in 1876.

School System.—The present school system of the state was established in 1870, the act which established it receiving some slight modifications the following year. The general supervision of the schools rests with the *state superintendent.* He is elected for four years, is required to secure uniformity in the text-books used in the schools, and to discharge all other duties usually pertaining to the office. The *state board of education* consists of the superintendent, and the several county school commissioners. It convenes annually in regular meetings at the capital, or in special meetings at such other times and places as the superintendent, who is its chairman, may direct. *County school commissioners* are elected biennially, one in each county. They direct the expenditure of the school funds, appoint teachers, and manage the schools, generally with entire independence of the state superintendent, whose powers are chiefly advisory. *County school examiners*, two in number, are appointed by the county commissioner, the three constituting a board, of which the county commissioner is chairman, for the examination of teachers, and the appointment of district trustees. In addition to these officers, the governor, the chairmen of the committees of education in the two houses of the legislature, and two others one appointed by each house, constitute a committee of five to choose a uniform series of text-books for the schools of the state. The school revenue is composed of the state school tax, the poll tax, and district taxes. The first is derived from a levy of two mills on every dollar of taxable property. District taxes are subject to the will of the people. Owing to the failure of the general assembly to pass specific laws, as intended by the constitution of 1868, various matters necessary to give definiteness to the school law and make it effective, are undetermined. The school age is from 6 to 16 years.

Educational Condition.—The number of school-districts in the state, in 1876, was 427: the number of free schools, 2,776. The only graded schools in the state are in the city of Charleston. The school revenue for the year 1876 was as follows:

From state appropriation...	$250,000.00	
" district taxes.........	146,493.57	
" poll tax..........	62,250.24	
" Peabody Fund.......	3,850.00	
Total................		$462,593.81

The expenditures were as follows:

For teachers' salaries......	$377,920.33	
Building and repairing school-houses, etc.	24,989.98	
Expense of enumeration of school children...........	4,230.65	
For all other purposes......	16,731.19	
Total.................		$423,872.15

This statement of expenditures is only approximatrly correct, as complete returns from some parts of the state had not been received by the superintendent.

The chief items of *school statistics*, for the year 1876, are the following:

Population of the state of school age:		
Whites...............	85,678	
Colored..............	152,293	
Total.....................		237,971
Number of children attending school:		
Whites............. .	52,283	
Colored..............	70,802	
Total.....................		123,085
Teachers employed, males, white....	1,140	
" " females "	841	
" " males, colored...	774	
" " females " ...	313	
Total.....................		3,068
Monthly average paid to teachers, males...		$30.40
" " " " " females..		$26.86
Average number of months of school session		4.5

Normal Instruction.—The State Normal School at Columbia was opened in 1874. It provides a two years' course of study in two departments; the first, a training class for fitting teachers for lower-grade positions; the second, for fitting them for positions in the higher schools. The board of regents determines the number of students to be admitted annually, and these are apportioned among the counties of the state according to the number of representatives of each in the general assembly. The candidates so apportioned, pass through a competitive examination, conducted by the county school commissioners and board of examiners, the commissioner recommending the candidates according to their standing in the examination, except in cases of special aptitude for teaching on the part of the applicant. They are then re-examined by the president of the normal school, and if found qualified, are admitted upon a pledge of intention to teach in the public schools of the state. Certificates and diplomas are granted according to the degree of proficiency attained. During the first year of the school, 39 students were registered, 6 males and 33 females. The report for 1875 stated that the school was in a flourishing condition.— Six *teachers' institutes* were held during the year 1875; but the system has not yet been developed sufficiently to affect materially the educational interests of the state.

Secondary Instruction.—The institutions for supplying this kind of instruction, are few in number. In 1875, only 7 academies and seminaries made reports to the U. S. Bureau of Education,—1 for boys, 2 for girls, and 4 for both sexes. They employed 22 teachers, and had an attendance of 663 pupils. The number of pupils in the public schools pursuing higher studies, was 2,752. There are no high schools organized outside of Charleston. There is a preparatory school at Orangeburg, having, in 1875, an attendance of 209 pupils.

Denominational and Parochial Instruction.—The denominational schools in the state are not numerous, the instruction usually given in such institutions, being furnished, as demanded, by schools of other grades.

Superior Instruction.—The colleges and universities of the state are as follows:

NAME	Location	When organ-ized	Religious denomi-nation
Claflin University....	Orangeburg	1870	M. Epis.
College of Charleston.	Charleston	1789	Non-sect.
Erskine College......	Due West	1839	Rf. Presb.
Furman University..	Greenville	1851	Baptist
Newberry College....	Walhalla	1858	Luth.
University of S. C....	Columbia	1805	Non-sect.
Wofford College......	Spartanburg	1853	M. Epis. S.

Professional and Scientific Instruction.—Departments for furnishing this kind of instruction, are in operation in many of the colleges and universities of the state, but there are, in addition, special institutions, as follows: The Southern Baptist Theological Seminary, at Greenville, with 5 instructors and 66 students, in 1874—5; and the Theological Seminary of the General Assembly of the Presbyterian Church, at Columbia, with 5 instructors and 57 students.

Special Instruction.—The South Carolina Institution for the education of the deaf and dumb and the blind, located at Spartanburg, is a state institution. It has been closed, since October, 1873.

SOUTH CAROLINA, University of, at Columbia, S. C., was chartered as South Carolina College in 1801, and was organized in 1805. It became a university in 1865. It is a state institution, supported by legislative appropriations. Instruction is free to all, and there are no charges for rent of rooms or matriculation. The campus and grounds are in the center of the city. They cover four squares, including eighteen acres, and are adorned with shade trees. Within the enclosure are the library building, recitation rooms, dormitories, society halls, and residences of the professors. The university has a museum of mineralogy and geology, and a library of over 26,000 volumes. It comprises an academic department, preparatory school, law school, and medical school (suspended). In the academic department there are two quadrennial courses, the classical, leading to the degree of A. B., and the modern, leading to the degree of Ph. B. The preparatory school is designed for instruction in the higher English branches, as well as to fit boys for the college courses. Colored as well as white youth are admitted to all the courses. The legislature, in the session of 1873—4, established 124 beneficiary scholarships, open for general competition, each yielding $200 a year to the successful applicant. They are apportioned to the counties according to the number of representatives to which each is entitled in the lower branch of the general assembly. The scholarships are tenable for four years, or until graduation; and the holder may pursue either of the quadrennial courses. In January, 1876, there were 12 instructors and 196 students (11 law, 88 collegiate, 97 preparatory). Of the college students, 35 were pursuing the classical course, and 53 the modern course. The Rev. Anson W. Cummings, A. M., D. D., is (1877) the chairman of the faculty.

SOUTHERN UNIVERSITY, at Greensboro', Ala., chartered in 1858, and organized in 1859, is under the control of the Methodist Episcopal Church, South. It has productive funds to the amount of $51,000; the value of its grounds, buildings, and apparatus is $90,000. Before the war, its endowment was over $200,000. The library contains upward of 2,000 volumes, and the laboratory is well supplied with apparatus, chemical and philosophical. It was originally organized on the plan of the University of Virginia, and, besides the ordinary collegiate schools, has schools of law, medicine, and Biblical literature. In 1876—7, there were 14 instructors and about 100 students. The Rev. A. S. Andrews, D. D., was the chancellor until July, 1875, when he was succeeded by the Rev. Luther M. Smith, D. D., the present incumbent (1877).

SOUTHWESTERN BAPTIST UNIVERSITY, at Jackson, Tenn., was founded in 1874, by the Baptists of the south-western States. It is supported by tuition fees ranging from $12½ to $30 per term of 20 weeks, and by the income of an endowment of $60,000. The value of its real estate is $50,000. The academic department consists of a primary school and a grammar (or preparatory) school. The university comprises two departments: (1) literature and science; (2) law. The department of literature and science comprehends the seven schools, as follows: (1) Latin; (2) Greek; (3) mathematics; (4) natural science; (5) moral science; (6) English; (7) German and French.

Two auxiliary preparatory schools are to be established: one for East Tennessee, at Mossy Creek, and one for Middle Tennessee, in Murfreesboro, which will be component parts of the university. In 1875—6, there were 4 instructors and 191 students (52 collegiate, 44 grammar, 95 primary). The presidents have been: Geo. W. Jarman, A. M., 1874—5; Wm. Shelton, D. D., 1875—6; and Geo. W. Jarman, A. M., again, since 1876.

SOUTHWESTERN PRESBYTERIAN UNIVERSITY, at Clarksville, Tenn., chartered in 1875, was established by the Presbyterian synods of the South-west. It succeeded to the property and funds of Stewart College, which was continued on the existing plan, until the formal organization of the university proper. The university now has an endowment fund of $100,000, 24 acres of land, with commodious college buildings, and a considerable building fund, besides large and costly cabinets of minerals, fossils, and shells, and a valuable scientific library, presented by Prof. Wm. M. Stewart, after whom Stewart College was named. The college received its name in 1855, when the buildings, grounds, etc., of the Masonic University of Tenn. (founded in 1850 by the Masonic Fraternity of the state) were purchased in behalf of the Synod of Nashville. It was suspended during the civil war, and reopened some time after its close. It has a subcollegiate and a collegiate department, and confers the usual degrees. A Biblical course is prescribed through the four college classes. The cost of tuition ranges from $40 to $70 per annum. Free tuition is provided for all candidates for the ministry, and for all sons of Presbyterian ministers. In 1875—6, there were 6 professors and 131 students. The Rev. J. B. Shearer, D.D., is (1876) the president.

SOUTHWESTERN UNIVERSITY, at Georgetown, Williamson Co., Texas, under the control of the Methodist Episcopal Church, South, was opened as Texas University in 1874, and chartered under its present title in 1875. In it were merged Rutersville College, at Rutersville, chartered in 1840; Wesleyan College, at San Augustine, 1844; Soule University, at Chappel Hill, 1856; and McKenzie College, at Clarksville, 1860; all controlled by the same church. It is supported chiefly by tuition fees, but has an endowment of 12,000 acres of land. The tuition fee is $30 for one term of five months, or $50 for one session of ten months. The university comprises 12 schools; namely, mental and moral philosophy, Latin, Greek, pure mathematics, applied mathematics, German, Spanish, English language and literature, history and political economy, chemistry and geology, a commercial school, and a preparatory school. In 1875—6, there were 6 instructors and 78 students. The Rev. F. A. Mood, D. D., formerly president of Soule University, is now (1876) regent of this university.

SPAIN, a country of Europe, having an area of 195,774 sq. m., and a population, in 1870, of 16,835,500. With the exception of the Basques, in four of the northern provinces, almost all the inhabitants are Spaniards, and speak the Spanish language. Until quite recently, the only form of religion allowed by law was the Roman Catholic.

History of Education.— Education, in Spain, may be said to have begun with the establishment of the Roman power, in the 2d century before Christ. The progress made by the natives was so great that Strabo found no difference between a Roman and an Iberian youth. The schools of Cordova, especially, were, during the first centuries of the Christian era, in a flourishing condition, and educated some of the best representatives of the later Roman literature. It is noteworthy that the two Romans, who, under the reign of the emperors, achieved the highest reputation as writers on education— Seneca and Quintilian, were both natives of Spain. The invasion of the German tribes, for a time, checked the progress of education; but the scholarship of the Spanish monasteries was soon worthy to be compared with that of other Christian countries. Some of the Gothic kings, too, began to show an interest in education, which was well calculated to raise great hopes for the future. The conquest of Spain by the Arabs raised the country to the foremost rank among the nations of the earth in regard to education. The religious toleration of the Mohammedan rulers allowed Christian and Jewish scholars to teach in the schools side by side with Mohammedans, and produced a literary emulation which was followed by the most beneficial results. Dozy, in his *History of the Mohammedans in Spain*, shows that primary schools were numerous and well conducted, and that, while in the Christian countries only the priests possessed a moderate knowledge, in Andalusia the bulk of the people were able to read and write. Aristotle became better known to Christian Europe from translations made by Mohammedan Arabs; and Cordova and other seats of Mohammedan learning attracted the most gifted students from all parts of Europe. One of the most learned of the Popes of the middle ages, Sylvester II., was chiefly indebted for his scholarship to Mohammedan teachers. When the power of Mohammedanism declined, and the Christian kings began to recover the lost ground, Spain found a distinguished patron of education in king Alfonso X., surnamed the Wise (1252—84), who, in his remarkable code of laws, entitled *Las Siete Partidas*, devoted one chapter to *Estudios Generales*. Salamanca became the most famous university of Christian Europe, having, at one time, over 10,000 students. During the 16th and 17th centuries, the cause of education visibly declined. In the second half of the 18th century, Charles III. re-organized the universities of Salamanca, Alcala de Henares, and Granada, and established elementary and higher schools in all the market towns and villages. Under Charles IV. (1788—1808), the Pestalozzian system was introduced; but it did not lead to any lasting improvement. The new constitution of 1812 favored the development of education, but no real progress could be made during the illiberal reign of Ferdinand VII. Several attempts to re-organize the educational system were made during the regency of Christina, the reigns of Isabella and Amadeo, and the short republican administration; but, in consequence of the ensuing civil wars, no reform of importance has as yet been carried into effect.

Primary Instruction.—Primary instruction is compulsory, and, since 1869, free to all. By the law of 1857, it was divided into an elementary and a higher grade. The course of studies of the elementary schools comprised religion, Scriptural history, reading, writing, the elements of Spanish grammar, and the rudiments of arithmetic. In the higher primary schools, the same subjects were taught and, in addition, the elements of geometry, of linear drawing and surveying, history and geography (particularly of Spain), natural philosophy, chemistry, and natural history. The law of 1868 abolished the above distinction, and divided the schools into four classes: (1) *Escuelas de entrada*, for communities of from 500 to 1,000 inhabitants; (2) *Escuelas de primero ascenso*, for communities of from 2,000 to 10,000 inhabitants; (3) *Escuelas de segundo ascenso*, for cities of from 10,000 to 20,000 inhabitants; and (4) *Escuelas de término*, for the chief towns of provinces and cities of more than 20,000 inhabitants. The course of studies generally agreed with that of the law of 1857, but required for the girls' schools practical instruction in needle work, and recommended the introduction of music wherever possible. The law of 1857 declared all those schools public schools, which were sustained wholly or in part by the state, by charitable institutions, or by funds specially appropriated for this purpose. The law of 1868 added to these all schools sustained by religious corporations, but the republican government deprived the religious corporations of all privileges formerly possessed by them. An elementary school for boys is required to be established in every village of 500 inhabitants, and also one for girls, though neither need comprise, in the course of studies, all the subjects enumerated above. Similar schools for boys only, are admissible in communities with less than 500 inhabitants. Every town of 2,000 inhabitants must have two complete schools for boys and two for girls; and, for every additional 2,000 inhabitants, there must be an additional school for boys, and one for girls. Private schools are accepted, but one-third of the schools of a town must be public. In the chief towns of provinces, and in cities of more than 10,000 inhabitants, one of the public schools must be of a higher grade. Schools for children from two to seven years of age must be kept in cities with more than 10,000 inhabitants. At the same places, are evening schools and Sunday-schools for adults. By the law of 1868, only the normal school at Madrid was retained; while, in the provinces, it was deemed sufficient to permit the candidates for the office of teacher to attend the model schools in the chief towns. The normal schools, however, were re-opened by the revolutionary government. Every capital of a province is required to have a normal school, with a model school attached, which is generally the higher school of the town. The school in Madrid is called the Central Normal School. In order to become a teacher, a candidate must be 20 years of age, possess a good moral character, and must have passed the prescribed examination. Teachers can be removed only by the government upon the recommendation of the supreme council of study. The salaries of the teachers are very small; but, owing to the complete exhaustion of the Spanish treasury, even these are not regularly paid. The schools of the kingdom are under the supervision of a supreme council of study, consisting of 24 members who are appointed by the king. This council is divided into three sections: one for primary, special, and art schools, one for secondary schools, and one for superior schools. Every province has a provincial junta for the schools of that province; and every town has its local junta, consisting of the principal officers of the province or town, a priest, and at least two heads of families. At least one inspector is appointed for every province, by the king; and sometimes two are appointed; Madrid is entitled to three. The inspectors visit all the schools in their district, with the exception of the primary normal schools, which are left to three general inspectors. In 1872, there were 22,625 public schools, of which 16,294 were for males (infants, boys, and adults), and 6,331 for females. The number of private schools was 5,135, of which 2,901 were for males, and 2,234 for females; making a total of 27,760 primary schools. The number of male pupils in the public schools was 745,686; and of female pupils, 441,773; making the total number of pupils in the public schools 1,187,459. The private schools had 96,753 male and 97,760 female pupils, or 194,513 pupils of both sexes. The total number of pupils in the primary schools was 1,381,972. The number of normal schools was 31.

Secondary Instruction.—Secondary instruction is imparted in institutes, which are divided into three classes according to the population of their localities, that in Madrid being of the first class; those in the provincial capitals and at the seats of universities, of the second; and all the rest, of the third. Every province has one provincial institute; and Madrid, two; while local institutions are opened wherever they are needed. *Colegios*, or boarding-houses, have been established in connection with most of the institutes; while private *colegios* may be opened by any Spaniard of good repute and over 25 years of age, who holds the degree of licentiate from a university. The law of 1857 prescribed that all teachers in secondary schools should be 24 years of age, and should hold the degree of Bachelor of Arts. This provision was abolished by the revolutionary government, which required a competitive examination. The institutes are under the control of the rectors of the university districts, to whom the directors of the institutes must furnish a monthly financial report. If no university is near, the report is made to the minister. The course of instruction in the institutes is divided into general and applied studies. The former comprise religion and Scriptural history, reading, writing, universal and Spanish history, modern languages, Spanish and Latin grammar and composition, the rudiments of Greek, logic, psychology, and drawing. The course of general studies comprises two periods, of two and four years respectively, and prepares the student for the degree of Bachelor of Arts. The applied studies prepare the student to be an expert in mercantile affairs, mechanics, chemistry, or surveying, and cover a term of three years. They comprise linear and object drawing, mercantile arithmetic, and all such branches as can be applied in agriculture, in the arts, in trades, and in commerce and navigation. The number of institutes, in 1872, was 63, with about 30,000 pupils.

Superior Instruction.—Superior instruction is imparted in the universities. There are five faculties; namely, philosophy and literature; mathematical, physical, and natural sciences; pharmacy; medicine; and laws. These faculties, however, are not all represented in each university. Three degrees are conferred, — the baccalaureate, the licentiate, and the doctorate. The universities, in 1873, were as follows: Barcelona, with 55 professors and 2,440 students; Granada, with 47 professors and 1,404 students; Madrid, with 76 professors and 6,496 students; Oviedo, with 15 professors and 223 students; Salamanca, with 41 professors and 419 students; Santiago, with 28 professors; Seville, with 35 professors; Valencia, with 37 professors and 1,693 students; and Valladolid, with 31 professors and 1,050 students.

Special Instruction.—Special instruction is imparted in schools of agriculture, of architecture, of fine arts, of commerce, of engineering, and of mining. There is also a conservatory of music, at Madrid; a school of forestry, at Villaviciosa de Odon, and four schools of veterinary surgery,—at Madrid, Cordova, Leon, and Saragossa. The total number of students receiving special instruction, in 1872, was 1,372. See SCHMID, *Pädagogische Encyclopädie; Report of U. S. Commissioner of Education for* 1873.

SPANISH LANGUAGE. The Spanish language has but little claim to a place in the regular course of instruction, in schools and colleges, in comparison with the French and German languages. As Spanish, however, is not only the language of one of the nations of Europe, but is spoken in all the countries of South America, except Brazil; and also in Central America, Mexico, and even in some parts of the United States, and is thus the vernacular language of at least 60 millions of people, practical considerations commend its study to thousands of persons, students and others, in preference to either German or French. Independently of this consideration, the Spanish language, as a school accomplishment, is not without attractions. It ranks, indeed, among the most euphonious of modern languages, being even preferred, by some linguists, to the Italian; and its literature contains many works of enduring interest and value. Among historians, Mariana, and among poets, Lope de Vega and Calderon, deservedly hold a very high rank; while Cervantes, the immortal author of *Don Quixote*, has scarcely been surpassed for humorous description and lively satire. The Spanish language, like the French and the Italian, is one of the so-called Romanic languages (q. v.); but there are some words in it which may be traced either to the ancient Iberians, the ruling race before the invasion of the Romans, and an offshoot of whose language is supposed to survive in the Basque, or to the Celts who overran Spain as well as other parts of western Europe. The remarks made in the articles of this work on the derivation of the French and Italian from the Latin apply in a large measure also to the Spanish. When the Visigoths had established their rule in the country, they gradually adopted the vulgar Latin, which had already become the language of the bulk of the population. They retained, however, and introduced into the common language, a number of terms designating their political institutions and war customs. The use of the definite article, also, and the employment of auxiliary verbs in the formation of the past tenses of the active voice, and in all the tenses of the passive, passed from the language of the Teutonic conquerors into the new language of Spain, as likewise into those of France and Italy. The Arabs, with whom the Spanish Christians, for nearly 800 years, had to wrestle for the control of the country, introduced into the language a number of words relating to industry, science, and commerce; and some of these words, especially those beginning with the Arabic article *al* (as *almanac*, *alcohol*, etc.), have passed, through Spanish, into the modern languages of Europe in general. While the Spanish language presents a considerably larger number of non-Latin elements than either French or Italian, it deviates but little from these two sister languages in its structure and grammar. In the pronunciation of the vowels, it entirely agrees with the Italian. The two double consonants *ll* and *ñ* are peculiar to the Spanish; and of the English consonant sounds, *z* (as in *zone*) is entirely wanting. Though substantives have only two genders, masculine and feminine, the article has three, *el*, *la*, and *lo*; the last, which is the neuter form, being used to change adjectives into substantives (*lo bueno*, that which is good). The Spanish is richer than either French or Italian in augmentatives and diminutives; and the reflexive form of the verb is used more extensively, perhaps, than in any other language of Europe. The subjunctive has two more tenses than the Italian or French (*amare*, future; *amara*, second conditional). In words derived from Latin, the *e* and *o* of the accented penultima have frequently been developed into *ie* and *ue*, a change which, in this class of words, gives to the Spanish an undoubted superiority in euphony (Spanish *tiempo, fuerte;* French *temps, fort;* Ital. *tempo, forte*).—The proper method of teaching Spanish does not differ from that of teaching the *French language* (q. v.) A few lessons in comparative etymology will greatly facilitate the study of this as of every language. If, for instance, the pupil learns that such combinations as *cl, fl, pl* etc. in English words of Latin origin are often changed into *ll* (*llamar*, clamor; *llama*, flame; *llano*, plain), a large number of words will, at once, be familiar to him.—The first grammar, as well as the first dictionary, of the Spanish language, was published in 1492 by Antonio de Lebrija. The grammar and dictionary of the Spanish Academy (first published in 1771) at once became, and have since remained, standard authorities. The dictionary of the Academy has received many valuable additions and corrections from Salvá, who has also written the best Spanish grammar for natives. Etymological dictionaries have been published by Covarrabias (1674) and Cabrera (1837).

SPARTA, one of the principal states of ancient Greece, dates its important history from the regency of Lycurgus (q. v.), who devised a peculiar system of education, designed to foster, as the highest virtue, a contempt of life and of worldly goods, and, as worthy of the highest honor, the habit of prompt obedience to all the demands of the state. The central idea of his system was, that the interests of the state are paramount to every consideration of individual rights or feelings. Hence, according to it, the child was the property of the state, and its officers alone had the right to decide its destiny, even from its birth, infants physically incapable of the prescribed training not being permitted to live. In the early period of its life, the infant was allowed to remain with its mother, who was required to adopt every possible means to invigorate its body. With the 7th year of age, the state education began. The boys were committed to a public educational establishment (a sort of military school); and, by living thus apart from their friends, were made to realize early their membership in the state organism, with common interests and aspirations. The general direction was entrusted to a superintendent (*παιδοκόμος*), who was selected from among those who had been previously invested with the highest political dignities. Under him, were officers whose duty it was to guide the exercises of the boys. The Spartan system aspired to establish a perfect harmony between the will of the individual and the interests and demands of the state, as expressed by the laws. It provided a gradual transition from obedience to the exercise of authority, on the principle that those only know how to command who have learned to obey. Thus, the elder boys were permitted to participate in the training of the younger; and the latter were obliged to wait upon the former at table. As the purpose of the Spartans was to rear warlike citizens, physical training constituted the chief part of a youth's education. Every possible means was resorted to in order to cultivate fortitude, and the habit of enduring hardship and pain. The youths' diet was not only plain but scanty. They were permitted to steal the provisions necessary to satisfy their hunger, but if caught, were severely punished; as the intention was to develop cunning, agility, and dexterity—qualities requisite in war. The boys wore neither head nor foot covering, up to the age of manhood. At the 12th year, every kind of under-garment was laid aside, a long cloak (*χιτών*) being the only article of clothing worn, and that at all seasons. Their bed was hard, being prepared of the rushes that grew on the banks of the Eurotas. Corporal punishment was not only used as a means of discipline, but was deemed to be indispensably requisite for the formation of a manly disposition. The intellectual cultivation of the Spartans was very slight; but, on account of their political life, they were obliged to possess some learning. They, therefore, acquired by oral instruction a rudimentary knowledge of arithmetic and some other branches. They also learned to dance, sing, and play on some musical instrument, especially the flute and lyre (*κιθάρα*), and committed to memory the laws of Lycurgus. Girls studied the same subjects as boys, and also practiced gymnastic exercises to promote health and beauty. (See GREECE.)

SPENCER, Herbert, an English philosopher and author, born in Derby, April 27., 1820. At the age of seventeen, he became a civil engineer; but, at the end of eight years, during which he was a contributor to the *Civil Engineers' and Architects' Journal*, he relinquished his profession, and engaged in study. In 1842, he began the publication, in the *Non-Conformist*, of a series of papers, entitled, *The Proper Sphere of Government*. From 1848 to 1852, he was a regular contributor to the *Economist*, and furnished reviews and criticisms on various subjects to other periodicals. In 1854, the theory of evolution, a belief in which, as the cause of the present diversity in the animal kingdom, had gradually become strengthened in his mind, suggested itself to him as a universal process; and subsequent study has only served to confirm the truth of the suggestion. This view of evolution, as the method of nature in every department, is reflected in the only distinctively educational work he has published—a small volume, entitled, *Education: Intellectual, Moral, and Physical* (London and New York, 1860). This work, based upon the latest discoveries and conclusions of science, confirms the most important results of Montaigne, Locke, Rousseau, Isaac Taylor, and others — results reached only by an acute observation of mental phenomena, but without a perception of the reason or order of their development. It goes beyond them, however, in its attempt to lay down a complete scheme of education in accordance with the doctrine of evolution. The dominant idea of the method of Pestalozzi, discovered by him empirically through his strong sympathy for children, is in this work shown to be the true one; while his errors in the application of the method—errors which he himself acknowledged—are explained. Two of the distinctive features of the system proposed by Mr. Spencer are, that the concrete should precede the abstract in all early instruction, and the corollary which follows from this; namely, the superior uses of science as an educator; and the use of pleasure or interest as a test of the efficacy of the instruction. The gradual abandonment of corporal punishment, the disuse of rote-teaching, and the substitution of the direct appeal to nature, the increased attention given to physical education, and the general acceptance of the idea of mental *growth* by inherent power, in place of the artificial expansion produced by purely exterior forces, seem to indicate a practical acceptance of the doctrines of Mr. Spencer, whatever theoretical objections may be made to them.

STATE AND SCHOOL. In all civilized countries, the control of public schools is looked upon as one of the most important and difficult branches of public administration. Many states have a special ministry of public instruction; while others have established a bureau of education, connected with one of the ministries. (See MINISTRY OF PUBLIC INSTRUCTION.) As has been shown, in the articles on the history of education and on the several countries of the world, ancient and modern, the relation of state authorities to school affairs has widely differed in different times and countries. Even at the present time, there is not only a vast diversity in the school laws of different countries, but fundamental questions in regard to the powers of state authorities, in educational affairs, are still warmly discussed. Generally, however, it is conceded that the state has the right to require that every child in the country should receive a certain degree of elementary education. (See COMPULSORY EDUCATION, and PUBLIC SCHOOLS.) But one of the greatest educational controversies of the present time is, whether the state authority has the sole right to arrange a course of studies, without regard to the different religious views existing in a community. (See DENOMINATIONAL SCHOOLS.) Another controverted question is the right of the state to support by the public money any schools higher than those of an elementary grade. (See HIGH SCHOOLS.)

STEPHANI, Heinrich, a German educator and Protestant clergyman, born at Gemünd, in Bavaria, April 1., 1761; died at Gorkau, in Silesia, Dec. 24., 1850. After having been for a few years at the head of the schools in the little state of Castell, he was, in 1808, after the incorporation of Castell with Bavaria, appointed school councilor at Augsburg. Subsequently he held the same position at Eichstädt and Anspach; and. in 1818, he became dean at Gunzenhausen. From the latter position, he was removed in 1834. on account of his rationalistic views. His *Fibel* (1802), and several works on an improved method of teaching to read, contributed more than any other work to the progress of the phonic method (*Lautirmethode*) of reading German. He published several works on national education (*Grundlinien der Staatserziehungswissenschaft* (1797); and *System der öffentlichen Erziehung* (1805), in which he took the ground that the school should be separated from the church, and placed under the exclusive control of the state authorities, but that parents should have liberty to send their children to either state or private schools.

STEPHENS, Henry (Lat. *Stephanus*, Fr. *Estienne* or *Étienne*), was born in Paris in 1528, and died in Lyons in 1598. He was the grandson of Henry Stephens, who was the founder of a remarkable family of scholars and printers, which, for three generations, maintained its peculiar eminence. He was distinguished by the scholarly ability, but was wanting in the worldly prudence, which characterized his ancestors. He continued the business of his father in Paris and Geneva successively, publishing, among other works, those of Æschylus, Herodotus, Horace, Plato, Virgil, Pliny, and Plutarch. In 1572, he issued his *Thesaurus Linguæ Grecæ*, an abridgment of which was made by Scapula. The costliness of this work, by confining its sale to the wealthy, involved him in pecuniary difficulties, which ended only with his life. His remarkable ability as a classical scholar secured him the approval of the learned, and would alone entitle him to an enduring reputation. See LÉON FEUGÈRE, *Essai sur la Vie et les Ouvrages de H. Estienne*, (Paris, 1853); A. A. RENOUARD, *Annales de l'imprimerie des Estienne* (Paris, 1837—43).

STEPHENS, Robert, the father of the preceding, born in Paris in 1503; died, in 1559, in Geneva, to which city he had removed on account of persecution for his advocacy of the doctrines of the Reformation. The occasion for his persecution was found by his enemies in his edition of the Bible and of the Greek Testament, the former published in 1545, the latter, in 1549. He was considered one of the most excellent scholars of his time. As early as his 20th year, he published an edition of the New Testament in Latin, with corrections by himself, and, in 1532, began the publication of the most famous of all his works, his *Dictionarium seu Thesaurus Linguæ Latinæ*, a work which maintained an acknowledged superiority for more than two hundred years, new editions appearing, in London and Paris, as late as the present century. In 1543, he compiled the first Latin-French dictionary, a work which was received with great favor. He was at once author, printer, and publisher; and from his press were issued many editions of the Bible and of the Greek and Latin classics, all of which were marked by accuracy of scholarship and an artistic excellence which surpassed any thing that had been published, up to that time, in France. The division of the New Testament into verses, the method now generally employed, was first introduced by him. See A. F. DIDOT, in the *Nouvelle Biographie Générale*; and *London Quarterly Review for April*, 1865.

STEWART COLLEGE, Clarksville, Tenn. See Southwestern Presbyterian University.

STONE, William Leete, an American author, born at New Paltz, N. Y., April 20., 1792; died at Saratoga Springs, Aug. 15., 1844. He began life as a printer, but at 18 became an editor—editing successively various journals, but, from 1821 until his death, the *N. Y. Commercial Advertiser*. For some years, he was one of the school commissioners of New York City; and, during the years 1843—4, was the superintendent of the common schools. He will long be remembered on account of his famous discussion with Archbishop Hughes in relation to the use of the Bible in the public schools, his last letter to whom—occupying three columns of fine type in the *Commercial Advertiser*—was dictated on his death-bed but one week previous to his decease. Although Col. Stone's influence was widely extended throughout the country, it was felt more particularly in New York City. For many years, he was identified with all her interests; and she has reason ever to hold his name in kindly remembrance. The religious enterprises and benevolent associations of the day commanded his earnest efforts in their behalf; and, at home, the Institution for the Deaf and Dumb, and the Society for the Reformation of Juvenile Delinquents, found in him a steadfast supporter. "Col. Stone," writes Harvey P. Peet, the president of the New York Deaf and Dumb Asylum, "entered with characteristic energy into the effort to build up a superior institution for the Deaf and Dumb in New York; and I ascribe much of the success which crowned my labors to his ready sympathy and encouragement and his intelligent and zealous co-operation." Indeed, it may be truly said that to the cause of education he gave his whole energies and spared not his decaying strength. "As Superintendent of Common Schools," said Mr. Clark in announcing the fact of his decease to the Board of Education, at a special meeting called for the purpose, "his loss is irreparable, and from any knowledge I possess of the qualifications of others, I fear it will be long before his place will be fully supplied. His qualifications for that office were pre-eminent." His published works are quite numerous, but mostly on subjects pertaining to American history. Of these, perhaps the most admired are *Life of Joseph Brant; Tha-yen-da-ne-gea* (1838), new edition edited by W. L. Stone, Jr. (Albany, 1865); *Border Wars of the American Revolution* (1837); *Life of Red-Jacket—Sa-go-ye-wat-ha* (1835), new edition with life of the author by his son, W. L. Stone (Albany, 1866).

STOWE, Calvin E., an American clergyman, born at Natick, Mass., April 6., 1802. He graduated at Bowdoin College, in 1824, and at Andover Theological Seminary, in 1828; and, in the latter, he was immediately made assistant professor. From 1830—33, he was professor of Latin and Greek in Dartmouth College; and in 1833, of languages and Biblical literature in the Lane Theological Seminary. He visited Europe in 1836, to examine, for the State of Ohio, the public-school system of the German States, and published *Elementary Public Instruction in Europe* (1838), which was extensively circulated in Ohio by direction of the legislature. He published reports, also, on the *Education of Immigrants*, and the *Course of Instruction in the Primary Schools of Prussia*. In 1850, he was made professor of natural and revealed religion in Bowdoin College, Me., and, in 1852, professor of Biblical literature at Andover Theological Seminary. This position he resigned in 1864. He has published, also, a *History of the Hebrew Commonwealth*, a translation from the German of Johann Jahn (1828), *Lectures on the Sacred Poetry of the Hebrews* (1829), *Introduction to the Criticism and Interpretation of the Bible* (1835), *Origin and History of the Books of the Bible* (Part I., New Testament, 1867).—See Barnard, *American Teachers and Educators* (New York, 1861).

STRAIGHT UNIVERSITY, in New Orleans, La., founded in 1869, is under Congregational control. It was especially designed for colored youth, but none are excluded on account of race or sex. It has an endowment of $10,000, but is mainly supported by the American Missionary Association. The library contains nearly 2,500 volumes. It has now in operation a theological, a law, a normal, a classical, a preparatory, and an English course, and elementary departments. In 1875—6, there were 10 instructors and 246 students. The presidents have been: the Rev. Joseph W. Healy, 1869—71; the Rev. Samuel S. Ashley, 1871—4; and James A. Adams, A. M., since 1875.

STURM, Johann, one of the foremost educators of the 16th century, born at Schleiden (now in Prussia), in 1507; died in 1589. After teaching several years at Louvain and Paris, he was, in 1538, appointed rector in the newly-established gymnasium of Strasbourg, where his success was so great, that the city was called the *New Athens;* and pupils were sent there from many parts of Europe, among them the sons of noblemen and princes. In 1578, the institution contained more than a thousand pupils. In 1566, the emperor Maximilian II. conferred upon it the dignity and privileges of an academy, and Sturm was appointed *rector perpetuus*, in which position he continued till 1581. His title to fame rests upon his conception of an educational system, the record of his work in the gymnasium at Strasbourg, and the impulse which he gave to the establishment of classical schools. His educational system is clearly set forth in his treatise on the best mode of opening institutions of learning (*De literarum ludis recte aperiendis*), written in 1539, and published in his *Epistolæ classicæ* (Strasb., 1565). Sturm was generally regarded as the greatest educator connected with the Reformed Church, in the times of the Reformation; and, like Melanchthon, he received the title *Præceptor Germaniæ*.—See Barnard, *German Teachers and Educators* (N. Y., 1863); Schmidt, *La vie et les tra-*

vaux de Jean Sturm (Strasb., 1855); Loos, *Die Pädagogik des Johannes Sturm* (Berlin, 1872); Kueckelhahn, *Strassburg's erster Schulrector* (Leips., 1872).

SUNDAY-SCHOOLS, although of comparatively recent origin, and even yet in a condition of partial development, are already entitled to be ranked among the most important educational agencies of modern times, no less than among the voluntary activities of the Christian Church. In the latter character, they have been extensively established throughout Great Britain and the United States, and every-where, even beyond their primary object of moral and religious influence, their incidental results have entitled them to a high appreciation. They have given rise to new and important improvements in church architecture, and they have called into existence an extensive literature contemplating their special wants and use, while they have enlisted teachers by hundreds of thousands, and scholars by millions. In the United States, more particularly, they have claimed, and in fact assumed, a relation to public (week-day) schools corresponding to that which the sabbath holds to the secular days of the week. In this relation, they seek to supplement public and general education with the moral and religious influences of Christianity. For this object, they secure the attendance of scholars from the higher as well as the lower classes of the community, and enlist for their instruction a quality of talent and an amount of effort which money could never hire. The subject of Sunday-schools will be here considered under the three following heads: (1) Their origin and early history; (2) Their leading agencies; (3) Their past progress and present position.

Origin and Early History.—Since Sunday-schools became popular, various efforts have been made to fix their origin further back than the period to which it is usually assigned. The most that such efforts have been able to accomplish has been to point out a few sporadic beginnings somewhat analogous to that of Robert Raikes; but, in no other instance than his, can an actual historic connection be traced downward to the existing system of Sunday-schools. The effort of Raikes began in Gloucester, England, in the year 1781. It was purely philanthropic in its design, and only contemplated local results. Gloucester was a focus of pin manufacturing, at which children were gathered together in great numbers in order to be employed in the light work of the factories. As most of them were wholly uneducated, and many without parental restraint or supervision, they naturally fell into disorder and vice, especially on the Lord's day, when they were not employed in work. The attention of Mr. Raikes, a worthy printer of that town, was arrested by a condition of things so distressing to a person of Christian sensibilities. His own account of the origin of his efforts to establish Sunday instruction for those neglected children has a permanent interest. It was furnished in a letter to Col. Townley, and published in the *Gentleman's Magazine,* of London.

> Gloucester, June 5th, 1784.
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> "The utility of an establishment of this sort was first suggested by a group of little miserable wretches, whom I observed one day in the street, where many people employed in the pin manufactory reside.
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> "I was expressing my concern to one, at their forlorn and neglected state; and was told, that if I were to pass through that street upon Sundays, it would shock me, indeed, to see the crowds of children, who were spending that sacred day in noise and riot, to the extreme annoyance of all decent people.
>
> "I immediately determined to make some little effort to remedy the evil. Having found four persons, who had been accustomed to instruct children in reading, I engaged to pay the sum they required, for receiving and instructing such children as I should send to them every Sunday. The children were to come soon after ten in the morning, and stay till twelve: they were then to go home and return at one; and after reading a lesson, they were to be conducted to church. After church, they were to be employed in repeating the catechism till half after five, and then to be dismissed, with an injunction, to go home without making a noise, and by no means to play in the street. This was the general outline of the regulations. R. Raikes.

The terms in which the above letter was couched prove conclusively that the writer was describing something new, and it may be deemed fortunate that so intelligent an account of a project, then in its infancy, was placed upon record. So obvious was the utility of the schools thus founded by Mr. Raikes, that they immediately began to be imitated in surrounding towns. The period was favorable to their diffusion. Other philanthropists seized upon the idea. The want of such schools was found to be urgent in every large town, and in many smaller places. A Sunday-school society was formed, and so general an interest was awakened on the subject, that, in the course of a few years, Sunday-schools were opened in nearly every part of England. But they did not become universal till a higher idea than that of mere philanthropy took possession of their promoters. As in the case of Mr. Raikes, most of the early Sunday-schools were taught by hired teachers. This arrangement made it necessary to raise considerable sums of money which would need to be increased in proportion to the multiplication of the schools. Besides, it was found that persons engaged in the task of teaching in them from motives of an inferior if not mercenary character: and, hence, even the philanthropic design of the instruction was marred.—It was, therefore, a grand improvement upon the project of Mr. Raikes when gratuitous instruction from persons who served from Christian motives became generally introduced into the rising Sunday-schools. Perhaps no one individual was more instrumental in promoting this great improvement than the Rev. John Wesley, who was then in a most influential position at the head of a growing religious organization, and accustomed frequently to traverse England from end to end. He early conceived the idea of making these schools "Nurseries for Christians", and encouraged good people to work in them as teachers without pecuniary reward.—The idea of gratuitous instruction on the Lord's day to poor children, when once brought to the minds and hearts of the Christian people of Great Britain, was seen to be so perfectly in accord with the Saviour's command, "Go teach all nations", that it was adopted with a zeal and a universality that astonished the most sanguine of the original supporters of Sunday-schools. From that period, the success of the Sunday-school enterprise was assured. It crossed the Atlantic as early as 1786, during which year Bishop Asbury organized Sunday-schools in Virginia, in South Carolina, and in other parts of the South. In America, the system of gratuitous instruction has prevailed, with very few exceptions, from the first. It must, however, be acknowledged that the circumstances of society in the United States were very unfavorable to the general establishment and maintenance of Sunday-schools at that early period. The country was but thinly settled, and was just emerging from its colonial condition under the heavy burdens of the Revolutionary war. Moreover, in the Southern States, where Sunday-schools were first introduced, an active prejudice began, almost from the first, to develop itself against the instruction of colored children, lest they should be unfitted by it for the condition of slavery. From these and other causes, some twenty-five or thirty years elapsed before Sunday-schools sprung up extensively in America.—Sunday-schools in England were for a long period burdened with the task of teaching letters and the lowest rudiments of knowledge to the mass of their scholars. This was indispensable as a means of preparing them to read the Scriptures, and to comprehend moral and religious truth. The same necessity prevailed in some sections, and classes of the population, in the United States; but, throughout the larger portions of that country, the great majority of children gathered into Sunday-schools were those who received elementary, and indeed continuous, instruction in the public schools. In both countries, Sunday-schools have done not a little toward elevating general intelligence and stimulating secular study; but it is only where a good system of public instruction has prevailed that they have been able to do their best work.—As Sunday-schools are for religious instruction on the Sabbath, the Bible is the foundation and central text-book of all proper Sunday-school teaching. But as the word of God admits of elucidation from all branches of sound learning, it follows that the more knowledge persons, whether young or old, bring to its study, the greater progress they may be expected to make in the comprehension of its truths. The recent even more than the early history of Sunday-schools corroborates this view, in the fact that they have flourished most, and with the best results, where their scholars were most intelligent. Nevertheless, from first to last, they have shown the capacity of adaptation to all phases of society and all grades of intelligence. They have proved of inestimable value among the most degraded populations of great cities, and a fitting religious counterpart to the highest and most progressive secular schools.

Leading Agencies.—The whole history of Sunday-schools illustrates the voluntary principle in education, government aid having never been sought in their support. The instruction given in them has always been free; and, therefore, whatever Sunday-schools have cost has been the voluntary gift of the friends of religious education. The gratuitous bestowing of time and effort on the part of teachers has remained no less a gift of value than the money by which rooms, fixtures, books, and apparatus have been provided. Associated effort may be designated as the generic agency by which the vast sum of money has been obtained which has been furnished in aid of Sunday-school instruction. Associated efforts in behalf of Sunday-schools have assumed two forms: (1) local; (2) general; each correspondent and supplementary to the other. Local associations, whether in neighborhoods or in churches, have, from the first, been necessary to found and maintain individual schools. General associations were also, from an early day, seen to be important, for the purpose of diffusing information, and awakening public interest, both as to the necessity and the means of instructing the young in religious truth. They also did much to enlist and direct individual and local effort in the work of organizing schools; while, at the same time, they practically served as a bond of union between individual schools not locally connected.—A brief enumeration of the principal agencies and movements of the latter class will illustrate the progress and expansion of the Sunday-school idea both in England and America. In 1785, "The Society for Promoting Sunday-schools in the British Dominions", was organized in London, under the leadership of William Fox, who had previously proved himself to be a true philanthropist, by his zeal and liberality in efforts to educate the poorer classes of his countrymen. This society, during the first sixteen years of its existence, expended £4,000 in paying for the services of hired teachers. In 1790, the first official church action of a general character in behalf of Sunday-schools took place at a conference of the Methodist Episcopal Church, held at Charleston, S. C., in February of that year, under the presidency of Bishop Asbury. That good bishop and the ministers associated with him, had evidently seen such fruits following the establishment of Sunday-schools in various places during the previous four years, that they then sought to make them universal by the enactment of the following church rule:

> "Let us labor, as the heart and soul of one man, to establish Sunday-schools in or near the place of public worship. Let persons be appointed by the bishops, elders, deacons, or preachers to teach *gratis* all that will attend and have a capacity to learn, from six o'clock in the morning till ten, and from two o'clock in the afternoon till six, where it does not interfere with public worship. The council shall compile a proper school book to teach them learning and piety."

In 1791, the First-day or Sunday School Society was formed in Philadelphia. This society embraced persons of various denominations of

Christians, and contemplated the payment of teachers for their services. In 1797, the Gratis Sunday School Society was established in Scotland. In 1802, the Sunday School Committee of Wesleyans was organized in London, for the purpose of correspondence and other efforts to promote the organization and improvement of Sunday schools in the Wesleyan societies of Great Britain. In 1803, the London Sunday School Union was formed, a society still existing and in efficient action, though limited by its plan to the city and its immediate vicinity. In 1809, the Hibernian Sunday School Society was formed. In 1816, the New York Sunday School Union was formed; and, in 1817, the Philadelphia Sunday and Adult School Union. The latter was merged in the formation of the American Sunday School Union, in 1824. In 1826, the Sunday School Union of the Protestant Episcopal Church was organized in New York; and, in 1827, the Sunday School Union of the Methodist Episcopal Church, in the same city. Since that period, several other Sunday-school societies and unions have been formed in the interest of different denominations of Christians, both in America and in Europe. Prominent among them may be named the Massachusetts Sunday School Society, located in Boston, and supported by the Congregational churches of the United States. The enlistment of the press as an agency of help to Sunday-schools, was an event of the highest importance. For a considerable period, all efforts in their behalf were made at great disadvantage, for lack of suitable books of every kind, not excepting copies of the Sacred Scriptures. The formation of the British and Foreign Bible Society, in 1804, and, subsequently, of numerous other societies of a similar design, tended to a gradual supply of the Scriptures, in forms and at prices adapted to extensive use in Sunday schools. Aside from Testaments and Bibles, and the elementary instruction books preparatory to their use, the first publications extensively introduced into Sunday-schools were used as rewards. They were small tracts and story books, in paper covers, of a very inferior quality, only such being then attainable. About 1810, the Religious Tract Society of London began issuing children's books of an improved style as to paper, cuts, and matter, with special reference to Sunday-school patronage. The demand for such books increased with their production, so that the society named has gone on to the present day, constantly enlarging the list and improving the quality of its publications designed for the young, and also for teachers and adult persons engaged in Sunday-schools. In this respect, it has done a work of inestimable value for the Sunday-schools of Great Britain.—

It is, however, in the United States that the greatest work has been done in the preparation and publication of Sunday-school literature. There, circulating libraries and juvenile religious books were first extensively adopted as auxiliaries of Sunday-school work. There, too, not only Sunday-school library books, but periodicals and requisites of every description have been published in the greatest profusion, as well as with great elegance and cheapness. Not only have the Sunday-school unions made a specialty of such publications, but various other religious publication societies, *e. g.* the American Tract Society of the Presbyterian and Baptist Boards of Publication; and, indeed, many private publishers have issued large lists of books designed for youth and children. In fact, the Sunday-school libraries of the United States have become so numerous and important, as to secure enumeration in the official census of the government, with the following result, in 1870: Sunday-school libraries, 33,580; volumes, 8,346,153. This aggregate, large as it is, does not include the State of Connecticut, and, for other reasons, is evidently far below the facts in the case at the present time. No other libraries are so widely diffused as those of Sunday-schools. They are not only found in cities, where most great libraries are located, but in the remotest sections and neighborhoods of the land, and every-where circulated without charge to those who desire to read them. In so vast an aggregate of volumes, it would not be strange, if there were some of an indifferent and, possibly, even of a bad character. But such would prove only exceptions to the general rule that Sunday-school libraries furnish wholesome as well as attractive reading to millions of children and youth, thus projecting the influence of the schools into the week-day life of the scholars who attend them. Most of the American Sunday-school unions not only publish books, but maintain departments of missionary effort for the purpose of founding new and aiding needy schools. In this manner, they are constantly enlarging the sphere of Sunday-school work and influence. The sums of money expended by these societies are, in the aggregate, very large, but yet small when compared with the larger amounts locally contributed for the same objects.—To pass from external to internal agencies which have contributed largely to the success of Sunday-schools, mention may be made of music, infant classes, and measures for the training and special qualification of teachers. The practice of devoting a considerable portion of the time allotted to Sunday-schools to the singing of hymns, originated very early, and has been continued to the present day. It has proved at once a means of attracting children to the schools, and an easy and pleasant method of impressing sacred truth upon their memory.—In 1788, the Rev. John Mosby recorded in his journal the opinion that there were not to be "found together in any chapel, cathedral, or music room within the four seas, such a set of singers, as the boys and girls selected out of our Sunday-schools in Bolton, in which they had been accurately taught."—"Besides," said he, in concluding his record, "the spirit with which they all sing, and the beauty of many of them so suits the melody, that I defy any to exceed it, except the singing of angels in our Father's house." The venerable man had evidently caught the enthusiasm which pervaded the children, and which, from that day to this, has been a great source of power throughout the Sunday-school world. In later years, hymns and tunes specially designed for the young have been composed and published in great numbers, and their use has become so common and so popular, as to have greatly influenced the singing in the churches of all denominations of Christians.—Infant-class instruction has had, by far, its widest field and largest success as a branch of Sunday-school effort. By means of oral instruction, simple music, and diversified object lessons, it has been found practicable to secure the regular attendance of vast numbers of children of infantile years, and to hold them under profitable instruction till of sufficient age to be promoted to higher classes.—For a long period, the most that was thought possible to be done for the training and special instruction of Sunday-school teachers, was sought to be accomplished through pastors' and superintendents' Bible classes. But after the establishment of teachers' institutes for the higher instruction of the teachers of public schools, the query was raised whether something analogous might not be devised for the special improvement of Sunday-school teachers. With a joint reference to that design, and the kindred one of deepening and widening public interest in the Sunday-school enterprise, a system of conventions was projected, which, from small beginnings, has grown to grand proportions. In these conventions, lectures are given on important topics, apparatus and new publications are exhibited and explained, and model and normal classes are taught by skilled instructors. Wherever practicable, as in small towns or villages, Sunday-school teachers are invited to attend in mass. Conventions for larger districts, counties, and states are composed of delegates who are supposed to be representative persons from their several localities. So encouraging have been the results following Sunday-school conventions, that they have been expanded so as to transcend even the bounds of large states, and to enlist national and even international representation. A world's convention met in London in 1862, and a German national convention in Hamburg in 1874. In the United States, in 1875, twenty-one state conventions were held, besides one national and one international convention. One result of these large conventions has been the extensive adoption, since 1872, of a system of international lessons for Bible study. Uniform schemes of simultaneous study had been previously adopted, to a considerable extent, both in Great Britain and America. The international use of systems prepared by joint committees has, undoubtedly, given increased interest and impetus to Scriptural studies throughout the Protestant world. This kind of simultaneous study has been further popularized by the publication of notes and comments on the uniform lessons in hundreds of periodicals throughout various countries and in different languages. The one serious defect of the convention system is the brevity of time during which conventions can be held. Efforts have been made, within a few years past, to remedy this, by holding Sunday-school assemblies to continue in session from one to three weeks at a time. The Chautauqua Sunday-School Assembly has now held three successful and largely-attended annual sessions, at which hundreds of persons have participated in thorough and systematic Bible study, with a degree of enthusiasm which has so far become contagious, as to result in permanent arrangements for similar annual assemblies, at summer resorts, in various parts of the United States. Should these assemblies become a permanent feature of the American Sunday-school enterprise, as now seems probable, they will go far towards forming a parallel with the normal schools of the various states for the training of public-school teachers, and thus largely contribute to the continued elevation of the character, and increase of the efficiency, of Sunday-school instruction.—It is, perhaps, difficult to determine whether Sunday-schools are more indebted to modern architecture for helps toward their development, or modern church architecture to Sunday-schools for the material improvements they have demanded in recognition of the wants and welfare of children. Certain it is that no church edifice is now considered complete, or properly adapted to its objects, that does not embrace, within itself, or some contiguous structure, ample rooms and fixtures for the accommodation of infant classes, youths' classes, and Bible classes, including a general assembly room for the Sunday-school, as a whole. These provisions already exist in thousands of beautiful churches, which thus stand as monuments of the Sunday-school idea, and are, also, suggestive of other improvements likely to be introduced hereafter.

Past Progress and Present Position of Sunday-Schools.—There are two modes of indicating the progressive advance of Sunday-schools and the position to which they have now attained. The one is by general statements, and the other, by the comparative showing of such numerical statistics as are available. As neither of these modes is fully adequate, both will here be employed to a limited extent, in order that they may, as far as possible, supplement each other. Going back to the beginning of 1781—less than 100 years—we find no such institution as the Sunday-school known in any part of the world. At the present time, Sunday-schools are found in active operation in all Protestant countries and missions throughout the world. They have also been adopted by Roman Catholics and Jews, in all Protestant countries. Not to speak of the influence of Sunday-schools, in the religious bodies last named, it is safe to say that the great majority both of the members, ministers, and missionaries of the Protestant world are, at this time, the *alumni* of Sunday-schools, and are found among their grateful and active supporters. In passing from general though significant statements like these, to such showings as may be made in figures, it seems to be necessary to explain that Sunday-school statistics as minute and comprehensive as are now seen to be desirable, are not in existence. Governments have not been interested to collect them, and comparatively few of the promoters of Sunday-schools have recognized their importance. Hence, even up to this time, there has been little uniformity in methods, and still less co-operation in making up comprehensive exhibits of numbers and results. The most, therefore, that has been as yet possible in the way of such exhibits, has been to form estimates based upon accurate statistics taken within certain districts or churches, and to extend the *pro rata* outward. The earliest Sunday-school estimate on record is that of the Sunday School Society of London, which, in 1786, five years after the opening of Raikes's first school, estimated that 250,000 scholars were already enrolled in Sunday-schools. About 40 years later (1827), the American Sunday School Union estimated that the number of Sunday-school scholars in different countries reached the number of 1,250,000. From about that period, the growth of the Sunday-school enterprise was more rapid than previously, so that the second quarter of the current century witnessed remarkable progress in it. About the middle of the century, an effort was made in England under government sanction to ascertain the number and attendance of the Sunday-schools in that country. On a given Sunday, the 30th of March, 1851, the Sunday-schools of England and Wales were simultaneously inspected; and there were found, in 23,514 schools, 302,000 teachers and 2,280,000 scholars. The number of enrolled scholars was 2,407,409, or about three-fifths of the number of children enumerated by the census of the country, between the ages of five and fifteen. A similar proportion of children in American Sunday-schools, at the same period, would have reached the number of 3,000,000. If to those aggregates, the probable number of Sunday scholars in Scotland, Ireland, and other countries, at the same date, be added, it seems quite safe to believe that there were in Sunday-schools throughout the world, at the end of 1850, not less than 6,000,000 of scholars. Similar estimates made at the end of another quarter of a century, indicate that, at the end of 1875, there were in operation, in all countries, 110,000 Sunday-schools, embracing 1,500,000 teachers and 10,000,000 scholars. One statistician of some prominence has estimated that there are, in the United States alone, not less than 81,858 Sunday-schools and 6,869,696 scholars. On that basis, the above aggregate for all countries might safely be enlarged. Unquestionably, the proportion of Sunday-school scholars to the population, or to the membership of churches, is greater in that country than in any other. Hence, it seems appropriate that there should exist in New York a Foreign Sunday-school Union, having for its design the promotion of Sunday-schools abroad, particularly on the continent of Europe. That society, though of recent origin, is in vigorous operation, and hopeful of increasing results from year to year.

SUPERIOR INSTRUCTION, a term used to denote instruction of the highest grade, or that given in colleges and universities, both in the academic course, or in special or post-graduate courses.

SUPERVISION, School, constitutes one of the most essential elements of an efficient school system. The supervision which is necessarily given by the principal of the school to the work performed by his assistants is not here referred to, but that which is usually assigned to a superintendent of schools, whose special function it is to see that every school under his jurisdiction is efficient both in discipline and instruction. As a general rule, no extensive work employing a large number of operatives, each performing certain prescribed duties, which contribute toward the accomplishment of a general result, can be carried on efficiently without constant supervision. School supervision is needed for two purposes: (1) to enforce the general rules and regulations prescribed by school authorities; and (2) to see that the proper methods of instruction are employed, and that the teaching is made effective. To attain these objects, the schools must be both *inspected* and *examined*. By inspection the superintendent keeps himself informed in regard to the discipline of the school and the methods of instruction employed by the teachers; by formal examinations at stated periods, he is enabled to ascertain, to a certain extent, the actual result of the teaching, that is, its effect on the pupils' minds, both as to imparting information and training. Both of these are considered indispensable. "An inspection," says Superintendent Philbrick, of Boston, "is a visitation for the purpose of observation, of oversight, of superintendence. Its aim is to discover, to a greater or less extent, the tone and spirit of the school, the conduct and application of the pupils, the management and methods of the teacher, and the fitness and condition of the premises. Good inspection commends excellences, gently indicates faults, defects, and errors, and suggests improvements as occasion requires. * * * An examination is different from an inspection, both in its aims and methods. An examination is a thorough scrutiny and investigation in regard to certain definitely determined matters for a specific purpose." The best methods of teaching, if not uniformly and diligently employed, will not impress the pupils' minds; and on the other hand, the pupils may gain considerable knowledge of the prescribed branches of study, but not in such a way as to cultivate proper habits of thought. Regular examinations, besides ascertaining the merits and qualifications of the teachers, afford a wholesome stimulus, when judiciously and skillfully conducted, and afford a definite aim toward which their efforts may be directed. On the other hand, if attempted by incompetent and indiscreet persons, supervision of this and every other kind may do much harm. The qualities necessary for a good examiner are well defined by Supt. Philbrick: "In the first place, he should be independent, or, to speak more precisely, he should not be dependent upon the teaching corps. He ought to have had experience in teaching; and if he has had experience in grades similar to those in which he examines, so much the better. His mind ought to be liberalized by a wide range of educational reading and study. He ought to have a good deal of practical common sense. He should be more inclined to look on the bright side of things than on the dark side. He should look sharper for merits than for demerits. He should fear only two things: he should fear to do injustice, and he should fear himself. He should be eminent for good breeding, as a guaranty of respectful treatment from teachers and pupils. And to make sure of the requisite sympathy, like Burke's lawgiver, he ought to have a heart full of sensibility. In one word, for the successful exercise of this delicate and most useful function, the very best educators are demanded." The objection has sometimes been urged against examinations of this kind, that they encourage cramming; but this will, of course, depend upon the character of the examinations themselves. — See Payne, *School Supervision* (Cin. and N.Y., 1875); *Thirtieth Semi-Annual Report of the Superintendent of the Public Schools of Boston* (Boston, 1876). (See also Examinations.)

SWARTHMORE COLLEGE, at Swarthmore, Delaware Co., Pa., was founded in 1869, for the education of both sexes, who here pursue together the same courses of study, and receive the same degrees. It is under the control of the Society of Friends. It is supported by the fees of students, and the income of an endowment of about $75,000. For resident students, the price of board and tuition is $350 a year. For day scholars the price is $200 a year. The libraries contain about 3,000 volumes. The institution embraces a preparatory and a collegiate department. The latter has a classical section, with an ancient course leading to the degree of A. B., a modern course, leading to the degree of Bachelor of Literature; and a scientific section, with a chemical and an engineering course, each leading to the degree of B. S. In 1875—6, there were 19 instructors and 237 students, of whom 90 (56 classical, 26 scientific, and 8 pursuing an irregular or partial course) were of collegiate grade. The presidents have been Edward Parrish, 1869—71, and Edward H. Magill, A. M., since 1871.

SWEDEN AND NORWAY, two kingdoms in Europe, united under one sovereign, but otherwise independent of each other in their constitution. Conjointly with Denmark, they constitute the Scandinavian branch of the Teutonic or Germanic nations. Nearly the entire population of both kingdoms belong to the Lutheran Church. The area of Sweden, is 171,761 square miles, and, in 1876, its population was 4,383,291; the area of Norway is 122,280 square miles, and its population, according to the same census, was 1,802,882.

I. Sweden.—*Educational History.*— During the middle ages, Sweden compared favorably, in regard to education, with the countries of central and southern Europe. A larger proportion of boys and girls than in most other countries received an education in convent schools, and home education was of a superior character. In the 16th century, the cause of education began to make rapid progress, and many common schools, called *pædagogia*, were established, which were at first of the primary, but soon of a higher grade. The church order of 1571 contained a chapter entitled, "How schools should be taught," which must be regarded as the first Swedish school law. Gustavus Adolphus established the first gymnasium. His daughter, the learned Christina, promulgated, in 1643, a school order, dividing the schools into children's (elementary) and higher schools. In addition to these, there were so-called "writing classes," which may be regarded as the germ of the burgher and real schools. The school order of 1693 provided that no one should be permitted to marry, without a knowledge of Luther's small catechism. This largely increased the demand on the part of the peasantry for the establishment of more schools. Teachers, however, as well as schools continued in an unsatisfactory condition until the beginning of the present century. In 1820, the consistories and the clergy were instructed to see that no unfit persons were appointed teachers; and, in 1824, a new school order provided for the introduction of the Lancasterian system. In 1842, the present school law was introduced. It provides for the establishment of a stationary school in every church district or parish; but, in case of the extreme poverty of a parish, or when other local circumstances prevent the establishment of a stationary school, instruction may be imparted in a migratory school. Attendance at school is obligatory for all children of school age. A teachers' seminary is to be established in the chief town of every diocese. In 1858, the support of a higher elementary school was made obligatory in villages and districts having more than 60 pupils. A system of state supervision was provided for in 1851. In 1864, the *Peasants'* or *People's High Schools* were established on the plan of the Danish schools of that name. (See Denmark.)

Primary Instruction.— According to the law of 1842, primary instruction is imparted in stationary and migratory schools, besides which there are schools for young children, generally under a female teacher. Besides the school board of the district, there are one or more inspectors for each diocese, who are appointed by the minister of instruction. The local management of the rural schools is in the hands of a committee, of which the oldest clergyman is the chairman, whose vote in the election of a teacher counts as much as one half of all the votes cast. In the cities of Stockholm, Gothenburg, and Norrköping, the schools are governed by special laws; and, in each of the cities, they are under the management of a board of education. The salaries of the teachers are very small. The course of studies in the teachers' seminaries extends over three years, and comprises religion, the Swedish language, arithmetic and geometry, history, geography, natural science, pedagogy, penmanship, drawing, music, gymnastics, military drill, gardening, and fruit culture. In every seminary, there is a rector and at least three assistant teachers, besides special assistants for music, drawing, gymnastics, and military drill. In 1875, there were 8,123 primary schools, with 606,876 children. The number of teachers' seminaries in 1875, was 10.

Secondary Instruction.—The secondary schools are either higher or complete schools, with 7 classes, or lower or incomplete schools, with 2, 3, or 5 classes each. From the first class up, counting the lowest class as the first, the scholars are separated into two departments,—the classical and the real, of which the former corresponds to the Latin school and the gymnasium; and the latter to the real school. The school year comprises 36 weeks, and scholars are admitted only at the opening of the schools in the autumn. All pupils must be at least nine years of age. The immediate direction of the schools is in the hands of the rector and the council of teachers. The bishop, as *ephorus* of all the schools in his diocese, stands above the council of teachers. All matters that cannot be decided by these authorities must be submitted to the ministry of instruction, and by the ministry to the king for a final decision. The king is, therefore, the highest school authority, and possesses, in school matters, both legislative and executive power. All matters pertaining to secondary schools are arranged by the bureau of the ministry of instruction, the chief of the bureau acting as inspector-general of all the secondary schools in the kingdom, which he must visit from time to time. For the two lower classes, there are class teachers, for the two highest, teachers of special subjects; and, in the intermediate classes, a mixed system prevails. The course of studies comprises religion, Swedish, Latin, Greek, Hebrew, French, German, English, mathematics, general history, natural philosophy and mechanics, chemistry and mineralogy, history, geography, mental philosophy, penmanship, and drawing. Of these, the ancient languages are not taught in the real department; nor are chemistry and mineralogy taught in the classical department. English and Hebrew are optional in the chemical department, no special time being assigned for them. During the last few years the study of German has made great progress. In 1872, there were 98 schools, with 12,356 pupils and 976 teachers.

Superior Instruction.—Sweden has two universities,—at Upsal and at Lund, with 168 professors and 2,080 students, in 1871. Of these, 409 studied theology, 207 law, 188 medicine, and 1,276 philosophy.

Special Instruction.—In 1871, Stockholm had an industrial school, with 1,765 students, the Royal Technical Institute, a college of pharmacy, a royal college of surgery, an academy of fine arts, and a royal academy of music. There were also 2 academies of agriculture, at Ultuna and Alnarp, 29 lower agricultural schools, an academy of forestry, 7 lower schools of forestry, 9 schools of navigation, 5 technical schools, 4 elementary technical schools, 2 elementary schools of mining, the Chalmers Industrial School in Gothenburg, 2 schools for nurses, 2 schools of veterinary surgery, and various military schools. The military schools are under the direction of the ministry of war; and the other special schools, partly under the ministry of the interior, and partly under that of finance.

II. Norway.—*Educational History.*—Little was done for public instruction in Norway prior to the 18th century. In 1736, a royal decree provided that no children should be admitted to confirmation, who had not been instructed in the elements of Christianity. A school law, based on this provision, was passed in 1739, but modified in 1741. Since the establishment of Norwegian independence, in 1814, the *Storthing*, or national legislature, has been actively engaged in promoting public instruction. A comprehensive school law was promulgated in 1827; a special law on city schools appeared in 1848. In 1860, the schools were re-organized under a new law, which, with a few additions, made in 1869, is still in force. Children must attend school from their eighth year until they are confirmed. Those who receive private instruction, must attend the examinations of the schools, and, if found deficient, must attend school.

Primary Instruction.—Primary schools are divided into *lower schools* and *higher schools*. Norway is divided, for school purposes, into 591 communities, of which, in 1875, 57 were city, and 434, country communities. The communities are again subdivided into circles, of which, in 1874, there were 6,371. Wherever 30 children can attend school, a separate school-house must be procured for them. Whenever the houses of a circle are too far apart, or if, for any other cause, a permanent school does not seem advisable, a migratory school must be supported. This is particularly the case in the numerous valleys on the coast, which are virtually shut off from each other. The studies pursued in the primary schools, are reading, writing, arithmetic, religion, music, and gymnastics and military drill, wherever the latter is possible. All children must attend school 12 weeks in the year, or in some migratory schools, 9 weeks. Children who have reached the fourteenth year, and are backward in their education, must receive special instruction, until they are prepared to enter the schools; and the necessary expense must be borne by the parents. The school authorities may also establish infant schools and industrial schools.—*Higher schools* may be organized either in connection with lower schools, or in connection with teachers' seminaries, or independently. Whenever the course of study extends over more than two years, the school must be divided into two departments, the first of which comprises the first two years, and the other, the remainder. Whenever necessary, the two departments may be situated in different parts of the district. Besides the studies of the lower school, there are taught in the higher school the native tongue (Danish), geography, history, natural sciences, drawing, and surveying. In the higher department, are still further added, mathematics, agriculture, and a foreign language, where it is desirable. No child under 12 years of age is admitted to the higher school. The schools in a community are under the direction of a school board, of which the clergyman is chairman, which board has charge of all school matters, while the clergyman, in particular, must superintend the instruction given in the schools. The board has also power to appoint agents, who must see that all children of school age attend schools. The provost has charge of the schools in his district; and the directory of the *stift*, or ecclesiastical province, of the schools in the *amt*. The king appoints a number of inspectors. The inspector is entitled to a seat in the directory of the *stift*, whenever school matters are under deliberation. The direct supervision over the schools of a *stift* is exercised by the inspector in conjunction with the bishop. Burgher and real schools are, in some cases, but little above the higher common schools; in others, they correspond to the German *realschule;* one, the Latin and real school at Frederiksstad, prepares its pupils for the university. Of *teachers' seminaries*, there are two classes: *higher* or *stift seminaries*, and the so-called *teachers' schools*. In the higher seminaries, the course of study comprises religion, the native tongue, arithmetic, music, geography, history, natural sciences, penmanship, drawing, gymnastics, and pedagogics. A model school exists in connection with each seminary. In the Teachers' Schools, the course of study requires from 1 to 1½ years. In 1874, there were in Norway, exclusive of Christiania, 4,277 permanent common schools, 2,094 migratory schools, 131 work schools for girls, 4 general work schools, and 13 infant schools. The number of children of school age was 213,968; the number of children in permanent schools, 169,737; in migratory schools, 36,577; the number of children instructed outside of the district schools, 3,235; and children not attending school, 4,419. The expenditures for primary schools amounted to $673,052, toward which the state contributed $91,875. The number of burgher and real-schools, in 1867, was 35, with 159 teachers and 2,531 pupils. The number of *stift* seminaries, in the same year, was 6, with about 300 pupils; and the Teachers' Schools were 15, with 217 pupils. Besides these, a seminary for female teachers has been established in Christiania. *Peasants'* or *People's High Schools* have been recently established in Norway on the same plan as those in Denmark (q. v.). Of these, in 1870, there were 11. In 1867, there were, also, 20 Sunday-schools, with 1520 pupils, and 27 asylums, with 2,876 children.

Secondary Instruction.—Secondary instruction is imparted in middle schools and gymnasia. The latter are divided into Latin and real gymnasia. The middle schools prepare scholars for the gymnasia. The course of study comprises religion, the native tongue, German, Latin, English, French, history, geography, the natural sciences, mathematics, drawing, and penmanship. In the Latin gymnasia, the studies comprise religion, the native tongue, ancient Norwegian, Latin, Greek, French and English, history, and mathematics. In the real gymnasia, Latin and Greek are omitted; while geography, natural sciences, and drawing are added, and more attention is paid to mathematics and the modern languages. Besides the state schools, there are also private schools for secondary instruction. There were, in 1875, 16 secondary schools, with 160 teachers and 2,099 pupils. The number of private schools, in 1870, was 6, of which 4, with 1,266 pupils, were in Christiania.

Superior Instruction.—Norway has one university, at Christiania, which was founded in 1811. It had, in 1874, 978 students. Connected with the university is a library, also large scientific collections, and an astronomical and a magnetic observatory. The lectures are entirely gratuitous, and matriculation at the university is made dependent upon a previous examination.

Special Instruction.—Agricultural schools are found in almost every province, supported by the provincial authorities; while a higher agricultural school is supported in Aas, near Christiania, by the government. The navigation schools, of which there are 6, necessarily occupy a prominent place in a country situated like Norway. Besides these, there is a military high school, a military and naval school, a polytechnic school, in Norten, and a drawing school, in Christiania.—See SCHMID, *Encyclopädie;* BARNARD, *National Education*, vol. II.; *Report on the Systems of Public Instruction in Sweden and Norway*, published by the U. S. Bureau of Education (Washington, 1871); and *Report of the U. S. Commissioner of Education for* 1873 *and* 1874.

SWITZERLAND, a federal republic of Europe, having an area of 15,992 square miles, and a population, in 1870, of 2,669,147. It is composed of 22 cantons, 3 of which are each subdivided into 2 sovereign half-cantons. About 59 per cent of the population are Protestants, and almost 41 per cent, Catholics. The majority of the inhabitants (about 69 per cent) are of German nationality; nearly 24 per cent speak French; the canton Ticino and a part of the canton Grisons are Italian. In the latter canton, there are also about 9,000 families that speak Romansch.

Educational History.—At the beginning of the middle ages, we find within the present boundaries of Switzerland some of the most famous monasteries of the Benedictine order. (See BENEDICTINES.) Later, the university of Basel occupied a high rank among the earliest universities of Europe. After the Reformation in the 16th century, the canton Zürich took the lead in the regulation of school affairs by forbidding any one to keep school without permission of the city council. Several other cantons could, in the 16th century, boast of good schools; but down to 1830, there was a lack of efficiency in the organization of the public-school system; and schools, more than in many other countries, were left to private enterprise. At the beginning of the 19th century, the educational achievements of Pestalozzi, Fellenberg, Wehrli, Girard, and others attracted the attention of the civilized world. Not only were hundreds of pupils sent to Swiss institutions from various countries, even from America, to obtain a good education, but young teachers repaired there, in large numbers, to study the new educational methods. On the shores of the lake of Geneva, a large number of private institutions arose to supply the universal demand at that time for instruction in the French language. The increase of these institutions stimulated an eagerness to educate boys and girls as private tutors and governesses; and for a long time, French Switzerland furnished Europe with a larger supply of this class of teachers than any other country.—Great progress began to be made, about 1830, in most of the Protestant and mixed cantons. In addition to the mediæval university of Basel, new universities, after the German model, were established at Zürich and Bern; and, in French Switzerland, the academies at Geneva, Lausanne, and Neufchatel endeavored to rival the best institutions of the kind in France.—In 1848, the federal constitution of Switzerland, for the first time, took notice of educational affairs, which until then had been under the exclusive jurisdiction of the cantons, by providing for the foundation of a federal university. In 1877, this project had not yet been executed. In 1854, the federal assembly resolved to establish in Zürich a federal polytechnic school. Since then, a growing desire has been evinced, especially among teachers, that the federal government should exercise an authority in school matters. Accordingly, the new federal constitution, adopted in 1874, contains the following provision in regard to schools: "The *Bund* (confederation) is authorized to establish, besides the existing polytechnic school, a university and other higher institutions of learning, or to aid such institutions. The cantons shall provide satisfactory primary instruction, which shall be under the exclusive control of the government. Primary instruction shall be obligatory and free in all the schools. The public schools shall be open to children of all creeds. Cantons that fail to observe these provisions shall be proceeded against by the *Bund*. No one shall be forced to receive any religious education or to perform any religious ceremony. The religious education of children, up to the age of 16, shall be left to their parents or guardians."

Primary Schools.—The primary schools in the Swiss cantons are generally under the control of the communities. In 1871, there were, in all Switzerland, 5,088 primary schools, with 411,760 pupils (205,228 boys, 206,532 girls) and 5,750 male and 1,724 female teachers. Of these schools, 3,924 were mixed; 578, boys' schools; and 586, girls' schools. In 58.1 per cent of the schools, the German language is the medium of instruction; in 31 per cent, French; in 9.6 per cent, Italian; and in 1.3 per cent, Romansch. The expenditure for primary schools amounted, in 1871, to 900,000 francs. In most of the cantons, the elementary-school systems have been re-organized by school laws enacted since 1870. According to the new school law of Zürich, promulgated in 1872, which has served as the basis of a number of school laws in other countries, the communal school comprises nine annual classes, instead of six classes as before that time. The chief branches of instruction in the primary schools of Switzerland are language and object lessons, the latter receiving more attention than in most other countries of Europe. The other studies of a primary school are religion, reading, writing, arithmetic, drawing, singing, and gymnastics. The real schools add to these studies geometry, history, natural history, and composition. Industrial schools, in which boys learn the elements of a trade or of agriculture, and girls are instructed in needle-work, are numerous in every part of Switzerland. For the education of teachers, there were, in 1875, 32 teachers' seminaries, the course of studies in which embraces pedagogy, religion, German, French, arithmetic, geometry, history, geography, natural history, singing, playing on a musical instrument, penmanship, drawing, gymnastics, military exercises, and agriculture. The larger institutions have four annual classes. In the cantons of Zürich, Vaud, Bern, and Aargau, pensions for superannuated teachers are obligatory; in Schaffhausen, Glarus, and the city of Basel, they are only permitted. The following table exhibits the number of schools, and the number of male and female teachers; also the proportion of scholars to the total population:

CANTONS	No. of schools	No. of teachers		Proportion of schol. to 1,000 inhabitants
		Males	Females	
1. Zürich	369	565	8	156
2. Bern	877	1.098	504	175
3. Lucerne	163	249	15	128
4. Uri	29	37	9	138
5. Schweitz	74	57	44	150
6. Unterwalden, Upper	26	9	26	134
7. Unterwalden, Lower	24	16	17	126
8. Glarus	32	65	—	152
9. Zug	28	41	22	140
10. Fribourg	303	248	89	164
11. Soleure	127	187	6	154
12. Basel City	14	48	10	66
13. Basel Country	74	111	—	196
14. Schaffhausen	39	115	2	192
15. Appenzell, Outer Rh.	70	86	—	188
16. Appenzell, Inner Rh.	16	18	4	133
17. St. Gall	302	406	13	156
18. Grisons	324	388	54	156
19. Aargau	334	505	33	158
20 Thurgau	185	240	2	185
21. Ticino	440	209	266	142
22. Vaud	570	539	205	142
23. Valais	404	281	169	172
24. Neufchatel	188	146	172	145
25. Geneva	76	86	54	73

Secondary Instruction. — The gymnasia and real schools of a higher grade are very differently organized in the several cantons of Switzerland. The state institutions in which a complete gymnasium is combined with a real school, under one direction, are called cantonal schools. In 1873, there were, in Switzerland, 67 gymnasia, colleges, and pro-gymnasia, with an aggregate of 4,900 pupils; and 41 industrial and real schools of a higher grade, with 3,800 pupils.

Superior Instruction. — Switzerland had, in 1876, four universities,—those of Basel, Zürich, Bern, and Geneva. That of Basel was founded in 1460; of Zürich, in 1833; of Bern, in 1834. Geneva has had a higher institution of learning since 1559; but it did not become a complete university until 1875. The number of students, in 1876, was, in Zürich, 328; in Bern, 385; in Basel, 158; and in Geneva, 235. All these universities have the four faculties of theology, law, medicine, and philosophy. The theological faculty of each of the universities belongs to the Reformed Church; Bern has also, since 1874, an Old Catholic faculty of theology. At the universities of Zürich and Geneva, the philosophical faculty is divided into two sections: one comprising philology, philosophy, and history; and the other, mathematics and natural science. In Bern, the medical faculty is divided into a medical and a veterinary section.—Besides the universities, there are 3 academies, or incomplete universities, — at Lausanne, Neufchatel, and Fribourg. That of Lausanne has faculties of Reformed theology, law, science, and literature; that of Neufchatel, law, science, and literature; that of Fribourg, Catholic theology and law. The universities of Bern and Zürich were among the first in Europe to admit female students; and their example has been followed by the university of Geneva. In 1875, Bern and Zürich had an aggregate of 63, and Geneva, 24 female students. Among those in Bern and Zürich, 39 were Russians, 8 Americans, 5 Austrians, 4 Germans, and 3 Servians.

Special and Professional Schools.—The Polytechnic School, at Zürich, is the only Swiss school under the control of the federal authorities. It comprises eight departments: architecture, civil engineering, industrial mechanics, industrial chemistry, agriculture and forestry, a normal school of mathematics and natural sciences, a school of literature, moral sciences, and political economy, and a preparatory course in mathematics. The other technical schools are the technical department in the academy of Lausanne, and the department of architecture in the lyceum of Lugano. The lyceum of the Benedictines, at Einsiedeln, has a philosophical and a theological department. There is, also, a philosophical department, connected with the lyceum of Lugano. There are six Catholic theological seminaries; a Reformed theological faculty, at Neufchatel; and theological schools of the Free Evangelical Church, at Lausanne and Geneva. There is a veterinary school at Zürich; an industrial school of higher grade, at Winterthur; a school for watch-makers, at Geneva; several commercial schools; seven agricultural schools; and a school of fine arts, in Geneva. There were also, in 1875, 13 institutions for deaf-mutes, with 233 boys and 159 girls; two institutions for the blind, in Zürich and Bern, with 58 boys and 54 girls; and one asylum for the blind, in Lausanne.—See Schmid, *Encyclopädie*, art. *Schweiz*; Barnard, *National Education*, vol. II.; Beer, *Das Unterrichtswesen der Schweiz* (Vienna, 1868); Kinkelin, *Statistik des Unterrichtswesens in der Schweiz im Jahre* 1871 (Basel, 7 vols., 1874, seq.); Wirth, *Allgemeine Beschreibung und Statistik der Schweiz*, vol. III.: *Das Unterrichtswesen;* also the annual reports on the educational condition of Switzerland, in the *Pädagogischer Jahresbericht.*

SYMPATHY, an instinctive feeling of interest in and affection for others, which prompts a correspondence of emotions. Persons in sympathy readily discern the mental states of one another, and evince by their actions that they suffer, mentally, the same distress, and feel the same joy. It is difficult to ascertain and define the source and basis of this sympathetic relationship; but personal influence greatly depends upon it. It is natural to some persons to be in sympathy with others; they seem to exert a kind of positive influence, drawing and binding all around them to themselves. Others, on the contrary, seem to be negative in their influence; they repel instead of attracting. They are cold and indifferent to others; or, if otherwise, unconsciously show that their apparent interest is feigned, not felt, proceeding from a sense of duty, not from natural warmth of feeling. — The teacher, above all others, should be sympathetic, because so much of his success depends upon personal influence. He should habitually strive to cultivate this quality, feeling assured that the measure of his professional skill and efficiency is the degree of sympathetic regard with which he inspires his pupils. (See Antipathy, and Love.)

SYRACUSE UNIVERSITY, in Syracuse, N. Y., chartered in 1870, is under Methodist Episcopal control. Genesee College, at Lima, chartered in 1849, was merged in it. It is supported by tuition fees and the income of an endowment of $150,000. The value of its buildings and grounds is $300,000. It has valuable museums, and libraries containing 9,000 volumes. The university consists of (1) The College of the Liberal Arts, opened in 1871; (2) The Medical College, opened in 1872; (3) The College of the Fine Arts, opened in 1873. Other colleges are contemplated by the charter. All the colleges of the university are open for the admission of women on the same terms as men. The following seminaries, in different parts of the state, have entered into the relation of gymnasia or preparatory schools to the university: The Hudson River Institute and Female College, at Claverack; The Cazenovia Seminary, at Cazenovia; The Ives Seminary, at Antwerp; The Amenia Seminary, at Amenia; and The

Onondaga Academy, at Onondaga Valley. The courses in the College of Liberal Arts, with the degrees conferred on their completion, are as follows: classical, A. B.; Latin-scientific and Greek-scientific, Ph. B.; scientific, B. S. The College of the Fine Arts is intended ultimately to include instruction in all the fine arts, consisting of (1) the *formative arts*,—architecture, sculpture, painting, engraving, and the various forms of industrial art, and (2) the *sounding arts*,—music, poetry and belles-lettres, and oratory. At present, courses of instruction in architecture, painting and engraving are all that have been organized. For the advanced degrees, in either college, a post graduate course of one year may be pursued. The cost of tuition in the College of Liberal Arts is $60 a year (to children of clergymen, $30); in the other colleges tuition is $100 a year. The number of instructors and students, in 1876—7, was as follows: Liberal Arts, 11 instructors and 155 students; Fine Arts, 9 instructors and 24 students; Medical School, 15 instructors and 58 students; total, 35 instructors and 237 students.—The number of pupils in the gymnasia preparing for college was 165. The chancellors of the university have been as follows: Alexander Winchell, LL. D., 1872—4, and the Rev. Erastus O. Haven, D. D., LL. D., since 1874.

TABOR COLLEGE, at Tabor, Fremont Co., Iowa, chartered in 1854, is controlled by Congregationalists. It was opened as an academy in 1857, and as a college in 1866. It is supported by the income of an endowment of $40,000, and by tuition fees, amounting to about $3,500 a year. It has a library of 3,500 volumes, and embraces the following departments: (1) College Department, including a classical and a scientific course of four years each; (2) Ladies' Department, with a four years' course; (3) Teachers' Department, with a two years' course; (4) Preparatory Department, with facilities for fitting for the higher departments; (5) Musical Department. Females are also admitted to the college department. In 1874—5, there were 12 instructors and 246 students; namely, college, 24; preparatory, 104; *ladies' department*, 89; teachers' department, 15; music, 56. The Rev. Wm. M. Brooks, A. M., is (1877) the president.

TALLADEGA COLLEGE, at Talladega, Ala., chartered in 1869, is under the control of the American Missionary Association. It is supported chiefly by contributions from the Congregational churches in the North. It was established, especially, for colored youth of both sexes, and comprises a primary, a normal, a preparatory, a collegiate and a theological department. In 1875—6, there were 12 instructors and 247 students: preparatory, 15; theological, 14; normal, 46; grammar, 25; intermediate and primary, 147. The Rev. E. P. Lord, A. M., is (1877) the principal.

TASMANIA. See AUSTRALASIAN COLONIES.

TAYLOR, Isaac, an English author, born in Lavenham, Aug. 17., 1787; died in Stanford Rivers, June 28., 1865. He was educated as an artist, but relinquished that pursuit and devoted himself to literature. In 1818, he began his literary career by contributions to the *Eclectic Review*; and, in 1865, he contributed to *Good Words*. The *Natural History of Enthusiasm*, which appeared in 1829, was published anonymously, and was received with extraordinary favor. In 1836, appeared *Home Education*, a work of unusual interest to educators by reason of its correct analysis of the human mind, and its illustration of the true order of the development of its powers. It is hardly too much to say that this book is invaluable to the teacher who would learn the right method to be pursued in education, or the *rationale* of that method. Its general conclusions are universally accepted by modern educators; while the detailed methods given for the cultivation of the mental faculties, and the illustrations of their unconscious exercise, are exceedingly suggestive and interesting. Mr. Taylor was the author of several other works, among which may be mentioned *The Elements of Thought* (1822), and *The World of Mind* (1857).

TEACHER, a person who assists another in learning, that is, in acquiring knowledge or practical skill. A school-teacher's office is, for the most part, confined to aiding the pupil in acquiring knowledge, with the twofold object of (1) mental discipline, and (2) imparting valuable information. Which of these is to be considered of primary importance depends upon the grade of the instruction and the subject taught. Although teaching is only a part of education, the teacher should be an educator, since he is required to perform an office which bears an important relation to the general development, or education, of the child; and, consequently, he should clearly understand the nature of that relation. In other words, no person can be merely a teacher; he must, to be truly efficient, educate while he teaches. Indeed, he cannot but do so. His example, and his personal influence of every kind, will necessarily educate — will tend to form, permanently, the character of his pupil, either for good or evil. This consideration should determine the qualifications of the teacher, which should not consist merely in scholarship, book-learning, or intellectual culture, but that assemblage of personal qualities and accomplishments (including scholarship) which will render his influence in every respect effective and salutary. (See DIDACTICS, EDUCATION, and INSTRUCTION.)

TEACHERS' INSTITUTE, the name given, in the United States, to an assemblage of teachers of elementary or district schools, called together temporarily for the purpose of receiving professional instruction. Such meetings are held under the direction of the school authorities, usually the state, county, or town superintendent; and quite often there is a provision of law requiring the teachers employed in the common schools to attend, and permitting a continuance of their salaries during such attendance. A teachers' institute is usually conducted by an experienced teacher, having special skill for the work. This requires a good knowledge of the practice and theory of teaching, especially as applied to the ordinary branches of common-school education; it also needs ability as a lecturer. Teachers' institutes are designed to serve as a substitute for, or as complementary to, normal instruction; and as such they constitute a valuable agency in connection with a system of common-school instruction. — See BATES, *Method of Teachers' Institutes* (New York), and *Institute Lectures* (New York); FOWLE, *The Teachers' Institute* (New York); PHELPS, *The Teachers' Hand-Book* (New York).

TEACHERS' SEMINARIES. Schools for the education and training of teachers are called *teachers' seminaries* in Germany, Russia, Finland, Norway, Sweden, Denmark, and the German cantons of Switzerland; *training schools*, in Austria and the Netherlands; *preparatory schools*, in Hungary; and *normal schools*, in France, Great Britain, Italy, Spain, Portugal, Greece, Roumania, the French cantons of Switzerland, and the United States. In Great Britain, the name *training college* is very generally used.—The first establishment of the kind of which there is any accurate account, was the Institute of the Brothers of the Christian Schools, founded, in 1681, by the abbé de la Salle, canon of the cathedral at Reims. — In 1697, August Hermann Francke, in connection with his orphan school at Halle, founded a *teachers' class*, composed of poor students who assisted him in the work of instruction in return for their board and lodging. From this class he selected, in 1704, twelve pupils who exhibited "the right basis of piety, knowledge, and aptness to teach", and constituted them his *seminarium præceptorum*. These pupil-teachers were trained for two years; and such was their aptitude for teaching that their fame was spread over the greater part of Germany, and hundreds flocked to Francke's school to study his improved methods and superior organization. Johann Julius Hecker, a pupil of Francke's, established a teachers' seminary at Stettin, in Pomerania, in 1735, and another in Berlin, in 1748. Hecker worked under the patronage of Frederick the Great, who issued a royal ordinance that all vacancies in the schools on the crown-lands should be filled by teachers trained in the Berlin seminary. In addition to this, he granted an annual stipend to twelve of the graduates, a number afterwards increased to sixty. The teachers' seminaries at Rekahn, in Brandenburg, became the model schools of Germany. From Prussia, the system gradually spread over the greater part of Europe. It was introduced into Hanover in 1757; into Austria in 1767; into Switzerland in 1805; into France in 1808; into Holland in 1816; into England in 1842; and into Belgium in 1843. Since then, it has been introduced into the remaining countries of Europe; into North and South America; and into British India and Japan.—As Prussia was the first nation to adopt and enforce the special training of teachers, the following provisions of the Prussian law of 1819 will serve to explain the aims and purposes of teachers' seminaries, not only in Prussia itself but in all the counties into which they have been introduced: (1) No seminary for teachers in the primary schools shall admit more than seventy pupil-teachers. (2) In every department in which the number of Catholics and Protestants are about equal, there shall be, as often as circumstances will permit, a teachers' seminary for the members of each denomination; but where the inequality is very marked, the teachers of the least numerous denomination shall be obtained from the teachers' seminaries belonging to that denomination in a neighboring department, or from smaller establishments, in the same department, annexed to an elementary primary school. Teachers' seminaries for the simultaneous education of persons of different religious belief shall be permitted when the pupil-teachers can obtain, close at hand, suitable instruction in the doctrines of their own church. (3) The teachers' seminaries shall be established, whenever it is possible, in small towns, so as to preserve the pupil-teachers from the dissipations, temptations, and habits of life which are not suitable to their future profession, but without subjecting them to a monastic seclusion; but the town must not be too small, in order that they may profit by the vicinity of several elementary and superior primary schools. (6) No young man can be received into a teachers' seminary who has not passed through a course of instruction in an elementary primary school; nor can any young man be received, of the excellence of whose moral character there is the least ground of suspicion. The age of admission into the teachers' seminaries shall be from sixteen to eighteen years. (7) As to the methods of instruction, the directors of the teachers' seminaries shall rather seek to conduct the pupil-teachers by their own experience to simple and clear principles, than to give them theories for their guidance; and, with this end in view, primary schools shall be joined to all the teachers' seminaries, where the pupil-teachers may be practiced in the act of teaching. (8) In each teachers' seminary, the course of instruction shall last three years, of which the first shall be devoted to the continuation of the course of instruction which the pupils commenced in the primary schools; the second, to instruction of a higher order; and the third, to practice in the primary school attached to the establishment. From the law of 1819, and from the general regulations, the following provisions have been gathered: No young man is allowed to conduct a primary school until he has obtained a certificate of his capacity to fulfill the important duties of a school-master. The examination of the candidates for these certificates is conducted by commissions, composed of two laymen and two clergymen, or two priests. The provincial consistories nominate the lay members, the ecclesiastical authorities of the respective provinces nominate the clerical members for the examination of the religious education of the Protestant candidates; and the Roman Catholic bishop nominates the two priests who examine the Roman Catholic candidates. The members of these commissions are nominated for three years, but they can afterward be continued in office if advisable. These certificates are not valid until they have been ratified by the superior authorities, that is, by the provincial consistories. The provincial authorities can re-examine the candidates, if they think that there is any reason to doubt what is specified in the certificate granted by the committee of examination, and can declare them incompetent; and they can require the local authorities to proceed to another examination, if they are not satisfied with the character of any of the candidates. Young women who are candidates for the situation of school-mistress are obliged to submit to the same kind of examination before they can obtain the certificate enabling them to take charge of a girls' school.—The provincial consistories have the power to send any master of a primary school who appears to be in need of further instruction, to a teachers' seminary for the time that may appear requisite to give him the necessary additional instruction. During his absence, his place is supplied by a student from the teachers' seminary, who receives a temporary certificate. The expenses of the masters who attend for a second time the teachers' seminaries are generally defrayed by the educational authorities. The school-masters are encouraged to continue their education by the hope of preferment to better situations, or to superior schools; but before they can attain this preferment, they must pass a second examination, conducted by the same authorities that conducted the former.—Teachers who show themselves entitled to promotion to the position of directors of teachers' seminaries, are authorized to travel, both in Prussia and in other countries, for the purpose of extending their knowledge of the organization, instruction, and discipline of schools. A valuable ordinance, passed in 1826, and renewed in 1846, requires every director of a teachers' seminary, once a year, to visit a certain portion of the schools within his circuit. He thus makes himself acquainted with the condition of the schools, listens to the instruction, takes part in the same, and gives to the teachers such hints for improvement as his observation may suggest. The results of his yearly visits, he presents, in the form of a report, to the school authorities of the province. — To render the efficacy of the teachers' seminaries more complete, it is provided that, at the end of three years after leaving the seminary, young teachers shall return to pass a second examination.—Before a young man is eligible for examination to enter a teachers' seminary, he must forward to the director or principal (1) a certificate signed by a priest or minister, certifying that his character and past life have been moral and blameless, (2) a certificate from a physician attesting his freedom from chronic complaints and the soundness of his health and constitution, (3) a certificate of his having been vaccinated within two years, (4) a certificate of his baptism (if a Christian), and (5) a certificate, signed by two or more teachers, of his previous industrious and moral habits and sufficient ability for the teacher's profession. The subjects in which the candidates are examined are Biblical history, the history of Christianity, Luther's catechism, writing, reading, arithmetic (mental and written), grammar, geography, German history, natural history, the first principles of physics, singing, and the violin. When the examination is finished, a list of the candidates is made out in the order of their standing; and from this, as many of the highest are elected students of the seminary as will fill the vacancies of that year, occasioned by the departure of those who have left to take charge of village schools. The course of instruction is twofold,—intellectual and industrial. The intellectual course consists in a review of, and a continuation in, the subjects above mentioned, to which are added botany, pedagogy, drawing, Latin and French, and very often English also. A knowledge of these languages is not required for a teacher's diploma; but, without a thorough familiarity with the other subjects of study, he cannot be licensed to teach. The industrial training consists of the performance of all the ordinary household work,—preparing the meals, taking care of the sleeping apartments, pruning the fruit-trees and cultivating, in the lands always attached to the seminaries, the vegetables necessary for the use of the household. At the end of the third year, the young men are examined, and marked 1, 2, or 3, or are rejected. Those marked 1 are entitled to teach as principals; and those marked 2 or 3 are only permitted to act in the capacity of assistants.

The increase in the number of teachers' seminaries in Europe, during the past twenty-five years, has been very marked. The number reported, in 1875, in the different European countries, British India, and the British Colonies, was as follows:

Austria proper	64	Denmark	5
Hungary	63	Netherlands	5
Prussia	101	Luxemburg	1
Other German states	73	Belgium	33
France	86	Spain	31
Italy	115	Portugal	6
Russia	45	Greece	1
Finland	3	Roumania	8
Sweden	10	Servia	1
Norway	7	Switzerland	32
England	41	British Colonies	13
Scotland	6	British India	104
Ireland	1	Total	855

Normal Schools in the United States.—**Massachusetts** was the first state of the American Union to introduce the system of teachers' seminaries, or normal schools. The people of New England became familiar with the Prussian system through the exertions of the Rev. Charles Brooks who had obtained his knowledge of it from Dr. Julius, whose acquaintance he had accidentally formed while crossing the Atlantic Ocean. Dr. Julius had been sent to the United States by the Prussian government to study prison discipline; and it was while on a voyage to Europe that he explained to Mr. Brooks the method of training teachers for the country schools. Mr. Brooks was so impressed and interested that he resolved to investigate for himself the Prussian system of teachers' seminaries. This he did with great care and attention to all the details. After his return to the United States, he devoted three years to the diffusion of his ideas concerning the necessity and importance of institutions for the education and training of teachers. He enlisted in the cause a considerable number of able men, among whom were John Quincy Adams and Daniel Webster. Finally, the legislature of Massachusetts was prevailed upon to establish a state board of education, with Horace Mann as its secretary, and to make an appropriation to institute two state normal schools. Mr. Mann became the ardent advocate of teachers' seminaries, institutes, and all other means of educating and training teachers for their work. Early in the present century, De Witt Clinton recommended the establishment of teachers' seminaries in the state of New York. The Public School Society of the city of New York founded, in 1834, a Saturday Normal School for teachers; but this was only a high school in which were taught the elementary branches of an English education. The first public normal school established in the United States was the one opened at Lexington (afterwards removed to Framingham, Mass.), July 3., 1839, under the principalship of Cyrus Peirce (q. v.); although S. R. Hall (q. v.) had opened a teachers' seminary of a private character as early as 1823. From that time till 1850, only seven schools were founded: three in Massachusetts, and one each in New York, Maine, Ohio, and Illinois. During the next decade, from 1850 to 1860, but twelve normal schools were established, three in Ohio, two in Massachusetts, two in Illinois, and one each in Connecticut, Michigan, Missouri, New Jersey, and Pennsylvania. Between 1860 and 1870, fifty-two schools for teachers were established; and, from 1870 to the close of 1875, sixty-six normal schools were founded. Very many of these schools have connected with them *model schools*, or schools of practice, sometimes called *training schools*, in which the students of the normal school proper are afforded an opportunity, under the supervision and direction of experienced teachers, of putting in practice, to some extent, the pedagogic principles and rules which they have acquired theoretically, so as to be prepared for actual work on emerging as graduates from the normal school. Such schools constitute a part of the means of professional training, as indispensable to the teacher as the hospital and *clinique* to the young and inexperienced physician. The following table exhibits the statistics of normal schools in the United States for 1876.

NAME	Number of schools	Number of students	Number of instructors
Alabama	4	367	18
Arkansas	2	216	5
California	1	390	10
Connecticut	1	175	8
Delaware	2	240	19
Georgia	2	334	3
Illinois	8	1,379	56
Indiana	5	1,771	24
Iowa	3	230	17
Kansas	3	994	20
Kentucky	3	140	13
Louisiana	4	99	6
Maine	4	548	19
Maryland	3	478	21
Massachusetts	7	1,265	70
Michigan	1	411	13
Minnesota	3	782	24
Mississippi	2	351	9
Missouri	8	1,871	72
Nebraska	1	282	7
New Hampshire	1	155	9
New Jersey	1	269	10
New York	9	4,158	158
North Carolina	4	397	15
Ohio	12	3,248	83
Oregon	1	4	—
Pennsylvania	12	4,017	125
Rhode Island	1	159	19
South Carolina	2	475	14
Tennessee	7	1,056	35
Vermont	3	482	22
Virginia	2	351	23
West Virginia	6	734	35
Wisconsin	5	1,027	53
District of Columbia	3	164	10
Utah Territory	1	76	1
Total	137	29,095	1,046

Teachers' seminaries have exercised the most beneficial influence in the communities in which they exist. The moral effect of the instruction of trained and educated teachers on the rising generation is incalculable. The gain in time, the better and simpler methods of teaching, the knowledge of the children's physical, mental, and moral nature, the good order, thorough organization, and general spirit of harmony and humanity which are the results of a thorough study of the theory and practice of teaching, combine to constitute the teachers' seminary one of the most useful and economic institutions of modern civilization. The teachers' seminaries of Prussia have filled the country schools of that nation with school-masters whose education, talents, and attainments have caused them, in the words of an enlightened English traveler, "to be respected by the whole community." Prior to the establishment of such seminaries, these country schools were taught by "ignorant tailors, shoemakers, common soldiers, and old women." To a great extent, the normal schools of the United States have exercised a similar influence in filling teachers' positions with a superior class of men and women. Although the normal schools of the United States cannot yet furnish one-tenth of the number of teachers required for the common schools, they exercise a powerful, though indirect, influence in creating a demand for better teachers, and in imparting and diffusing a knowledge of better methods of instruction. Intelligent statesmen in Europe and America have used their best efforts to establish teachers' seminaries, wherever the state has undertaken the education of the masses at public expense, as a measure of wisdom and economy. Experience has demonstrated the fact that, owing to the material on which the teacher operates — the childish mind — the profession of teaching differs from other professions, and cannot fall under the law of supply and demand, but requires the special interposition of private corporations or of government itself.

The following table shows the location etc. of the normal schools in the United States.

Normal Schools in the United States.

[N. C., Normal College; N. D., Normal Department; N. S., Normal School; T. S., Training School.]

	NAME	Location	When founded
1	State Normal School.....	Florence, Ala..........	1873
2	Rust Normal Institute...	Huntsville, Ala........	1866
3	Lincoln Normal Univ.....	Marion, Ala............	1870
4	N. D., Talladega College..	Talladega, Ala.........	1870
5	N. D., Arkansas Ind. Univ.	Fayetteville, Ark.....	1872
6	Pine Bluff Normal Inst...	Pine Bluff, Ark........	1870
7	State Normal School.....	San José, Cal..........	1862
8	State Normal School	New Britain, Conn....	1850
9	N. D. of Delaware College	Newark, Del...........	1873
10	Del. State Normal Univ...	Wilmington, Del.......	1866
11	N. D. of Atlanta Univ.....	Atlanta, Ga............	1869
12	Haven Normal School....	Waynesboro, Ga.......	1868
13	Evan.Luth.Normal School	Addison, Ill...........	1847
14	Southern Ill. Normal Univ.	Carbondale, Ill.......	1874
16	Chicago Normal School...	Chicago, Ill...........	1856
16	N. D. of Rock River Univ.	Dixon, Ill..............	1875
17	Cook Co. Normal School..	Englewood, Ill........	1867
13	N.W. German-English N.S.	Galena, Ill.............	1868
19	State Normal University..	Normal, Ill.............	1857
20	Peoria Co. Normal School.	Peoria, Ill.............	1868
21	Normal and Class. School.	Goshen, Ind...........	1873
22	N.W. Normal School......	Kentland, Ind.........	1874
23	La Grange Co. Nor. School	La Grange, Ind........	1875
24	Ind. State Normal School.	Terre Haute, Ind.....	1870
25	N. Ind. Normal School and Business Institute	Valparaiso, Ind.......	1873
26	E. Iowa Normal School...	Grandview, Iowa.....	1874
27	Chair of Didactics, Iowa State University........	Iowa City, Iowa.......	1872
28	Nor. Inst. (Whittier Coll.)	Salem, Iowa...........	1868
29	Kan. State Normal School	Concordia, Kan.......	1874
30	State Normal School.....	Emporia, Kan.........	1864
31	Leavenworth St. N. S.....	Leavenworth, Kan....	1870
32	N. D. of Berea College....	Berea, Ky............	1866
33	Kentucky Normal School.	Carlisle, Ky...........	1873
34	Louisville Training School	Louisville, Ky........	1871
35	Minden High Public School	Minden, La...........	1873
36	N. D., New Orleans Univ..	New Orleans, La.....	....
37	N. D., Straight University	New Orleans, La......	....
38	Peabody Normal Sem.....	New Orleans, La......	1868
39	Eastern State N. S........	Castine, Me...........	1867
40	State Normal School.....	Farmington, Me......	1864
41	N. D., Main Central Inst..	Pittsfield, Me.........	1872
42	N. D., Oak Grove Seminary	Vassalboro, Me.......	1846
43	Balt. N.S. for Col. Teachers	Baltimore, Md........	1866
44	M. State Normal School..	Baltimore, Md........	1866
45	St. Catherine's Nor. Inst.	Baltimore, Md.........	1875
46	Boston Normal School...	Boston, Mass.........	1852
47	Mass. Normal Art School.	Boston, Mass.........	1873
48	State Normal School.....	Bridgewater, Mass...	1840
49	Framingham State N. S...	Framingham, Mass...	1839
50	State Normal School.....	Salem, Mass...........	1854
51	Westfield State N. S......	Westfield, Mass......	1839
52	State Normal School.....	Worcester, Mass......	1774
53	Michigan State N. S......	Ypsilanti, Mich.......	1852
54	State N. S. at Mankato....	Mankato, Minn.......	1868
55	State N. S. at St. Cloud...	St. Cloud, Minn.......	1868
56	First State Normal School	Winona, Minn.........	1864
57	Mississippi State N. S.....	Holly Springs, Miss...	1870
58	Tougaloo Un. & State N. S.	Tougaloo, Miss.......	1371
59	Normal Institute.........	Bolivar, Mo...........	1868
60	S. E. Missouri State N. S.	Cape Girardeau, Mo...	1873
61	N. C., Univ. of Missouri..	Columbia, Mo........	1868
62	Fruitland Normal Inst...	Jackson, Mo..........	1864
63	N. D., Lincoln Institute..	Jefferson City, Mo....	1866
64	N. Missouri State N. S....	Kirksville, Mo........	1867
65	Normal School...........	St. Louis, Mo.........	1957
66	State N. S. District No. 2.	Warrensburg, Mo....	1871
67	Nebraska State N. S......	Peru, Neb.............	1867
68	N. H. State Normal School	Plymouth, N. H......	1870
69	State Normal School.....	Trenton, N. J.........	1855
70	N. Y. State Normal School	Albany, N. Y..........	1844
71	State Normal School.....	Brockport, N. Y......	1867
72	State Normal School.....	Buffalo, N. Y..........	1871
73	State Normal and T. S....	Cortland, N. Y........	1869
74	State Normal and T. S....	Fredonia, N. Y........	1866
75	State Normal and T. S....	Geneseo, N. Y.........	1871
76	Female Normal College...	New York, N. Y.......	1870
77	Oswego State Nor. and T.S.	Oswego, N. Y..........	1861
78	State Normal and T. S....	Potsdam, N. Y.........	1869
79	Ray's Normal Institute..	Kernersville, N. C....	1873
80	Ellendale Teachers' Inst.	Little River, N. C.....	1872
81	Shaw University	Raleigh, N. C..........	1865
82	Tilston Normal School....	Wilmington, N. C.....	1872
83	Northwestern Ohio N. S..	Ada, Ohio	1871
84	Ohio. N. S. & Business Inst.	Bloomingburgh, Ohio.	....
85	Cincinnati Normal School	Cincinnati, Ohio......	1868
86	Hopedale Normal School.	Hopedale, Ohio.......	1852
87	National Normal School..	Lebanon, Ohio.......	1855
88	Western Reserve N. S.....	Milan, Ohio...........	1852
89	N. D. Mt. Union College..	Mt. Union, Ohio......	1846
90	Orwell Normal Institute.	Orwell, Ohio..........	1865
91	Southern Ohio N. S.......	Pleasantville, Ohio...	1875
92	Republic Normal School..	Republic, Ohio........	1874
93	Ohio Central N. S........	Worthington, Ohio...	1871
94	N. S. of Wilberforce Univ.	Xenia, Ohio...........	1872
95	N. Course in Pacific Univ.	Forest Grove, Oreg...	1871
96	Allegheny Normal Inst...	Allegheny City, Pa....	1874
97	Bloomsburg State N. S...	Bloomsburg Pa.......	1869
98	Northwestern State N. S..	Edenboro', Pa.........	1861
99	State Normal School.....	Indiana, Pa............	1875
100	Keystone State N. S......	Kutztown, Pa.	1866
101	Central N. S. Association.	Lock Haven, Pa.......	1870
102	State Normal School.....	Mansfield, Pa.........	1862
103	Southwestern N. C.......	Sagamore, Pa.........	1865
104	State Normal School.....	Millersville, Pa.......	1859
105	Snyder Co. Normal Inst..	Selin's Grove, Pa.....	1872
106	Cumb. Valley State N. S...	Shippensburgh, Pa...	1873
107	Westchester State N. S...	Westchester, Pa......	1871
108	Rhode Island N. S........	Providence, R. I......	1871
109	Avery Normal Institute..	Charleston, S. C......	1865
110	State Normal School.....	Columbia, S. C........	1874
111	Nor. or T. S. for Freedmen	Knoxville, Tenn	....
112	Freedmen's Normal Inst.	Maryville, Tenn......	1873
113	New Providence Institute Maryville College.....	Maryville, Tenn......	1868
114	Le Moyne Normal School.	Memphis, Tenn.......	1871
115	N. D. of Fisk University.	Nashville, Tenn......	1866
116	N. D. Central Tenn. Coll..	Nashville, Tenn.	1866
117	State Normal University.	Nashville, Tenn......	1875
118	State Normal School.....	Castleton, Vt.........	1867
119	Johnson Normal School..	Johnson, Vt...........	1867
120	State Normal School.....	Randolph, Vt..........	1866
121	Hampton Normal and Agricultural Institute......	Hampton, Va..........	1872
122	Richmond Normal School	Richmond, Va.........	1867
123	Fairmount State N. S.....	Fairmount, W. Va....	1868
124	Glenville State N. S.......	Glenville, W. Va......	1873
125	Storer Normal School....	Harper's Ferry, W.Va.	1868
126	Marshall Coll. State N. S..	Huntington, W. Va...	1868
127	Shepherd College	Shepherdstown, W.Va.	1873
128	West Liberty State N. S...	West Liberty, W. Va..	1870
129	State Normal School.....	Oshkosh, Wis.........	1871
130	Wisconsin State N. S......	Platteville, Wis.......	1866
131	River Falls Normal School	River Falls, Wis......	1875
132	Holy Family Teach. Sem.	St. Francis, Wis......	1870
133	State Normal School.....	Whitewater, Wis......	1868
134	Kindergarten N. S........	Washington, D. C.....	....
135	N. D., Howard University	Washington, D. C.....	1867
136	Washington Nor. School..	Washington, D. C. ...	1873
137	St. George's Normal School	St. George, Utah.....	1875

TECHNICAL EDUCATION has for its object the improvement of the various arts and trades by imparting the requisite scientific knowledge and practical skill for their successful prosecution. Two great classes of trades to which it may be applied, may be noticed: (1) working trades (including chemical trades, as dyeing, tanning, etc.; mechanical trades, as watch-making, carpentry, etc.; artistic trades, as of the decorator, jeweler, engraver, etc.), and (2) commercial trades, as of the iron-monger and retailer of glass, ceramic wares, etc. The higher branches,—those in which the value of the product consists rather in the labor and skill bestowed than in the material used, and those involving the exercise of taste, have been naturally found to exhibit most improvement under a proper system of instruction, and, in this aspect, may be said to need most a special training. The International Exhibition in London, in 1851, which revealed the superiority of the Continental nations in all that relates to the application of art and beauty to manufactures, gave a special impulse to technical education. This superiority was traced directly to the facilities for special instruction afforded to manufacturers, artisans, and others, especially in France, Germany, and Switzerland, (the need of which has been increasingly felt with the progress of modern inventions), the advance of science, and the decay, in England, of the system of apprenticeship. A theoretical knowledge of principles, in addition to mere manual dexterity and empirical insight, has become more than ever necessary. Among the branches generally requisite, are drawing, geometry, and chemistry. Experience has proved that, to be in the highest degree efficient, technical education must begin in the primary school, and be based on general literary culture. In continental Europe, technical schools are generally supported by the government, either local or general. The means of instruction include lectures, evening schools and Sunday-schools, museums, etc. In Great Britain, mechanics' institutes are a prominent feature. These generally have a library, a reading-room, and evening classes in various branches. In Germany, there are, among inferior institutions, handicraft schools, further-improvement schools, etc., in which, sometimes, the common-school branches are taught to apprentices and journeymen, and, sometimes, instruction is given in geometry, drawing, and other special branches, as a qualification for the practice of the lower trades. The higher institutions impart technical instruction calculated to aid in the pursuit of the higher trades. They generally presuppose such a training as is given, for instance, in the higher real schools. Some are connected with the real schools as their higher classes; some are separate institutions, with three or four classes or courses, either similar to gymnasia, or between these and the universities; others are, in form, technical universities on the plan of the Polytechnic School of Paris. The branches taught are mathematics, mechanics, physics, chemistry, natural history, technology, drawing, modeling, etc. There are many special schools for apprentices on the Continent (giving instruction to weavers, watch-makers, machinists, etc., according to the needs of the locality), in which labor performed under the direction of experienced workmen occupies a large part of the time, while the rest is devoted to studies immediately bearing on the art or industry taught. In West Flanders, Belgium, there are communal schools for apprentice weavers, in which primary and religious instruction is joined with manual labor. In the power-loom weaving school of Mulhouse, Alsace, instruction is given of a grade to prepare superintendents of factories. The most important agency in the direction of technical education in Great Britain is found in the numerous art schools that have sprung up in various parts of the kingdom, at the head of which are those of the South Kensington Museum. These have been instrumental in diffusing a knowledge of industrial drawing, and their effects have been widely felt. The establishment of a central technical university (with subordinate colleges, etc., in regular gradation) has been advocated. In the United States, but little has been done toward technical education. There are mechanics' associations in various cities, which afford, to a greater or less extent, means for the general or technical improvement of the working classes, and numerous business colleges, in which a knowledge of book-keeping and other business operations is imparted. Industrial training is given in Girard College. Philadelphia. The Worcester County Free Institute of Industrial Science (see Science, Schools of) may be classed as a technical school. Industrial art is taught in the schools of the Cooper Union (New York), in the Philadelphia School of Design for Women, and in various scientific schools. In 1870, the state of Massachusetts provided by law that "Any city or town may, and every city and town having more than ten thousand inhabitants shall, annually make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day- or evening-schools, under the direction of the school-committee." Under this act, considerable progress has been made. A similar law was enacted in the state of New York in 1875. Among European institutions, the following may be mentioned: in Austria-Hungary, the Imperial Royal Commercial and Nautical Academy, in Triest, the Commercial High School, in Vienna, the commercial academies in Prague, Gratz, and Buda-Pesth, the Imperial Royal Technical Institute, in Cracow, the School of Industrial Arts and the School for Architects and Machinists, in Vienna, the schools for artisans in Gratz, Prague, Brünn, Bielitz, Czernowitz, and Kaschau, the Higher Weaving School, in Brünn, and numerous inferior schools, special and general, for artisans, etc.; in Germany, the higher commercial institutions in Berlin, Breslau, Dantzic, Coblentz, Frankfort, Hanover, Augsburg, Leipsic, Dresden, Chemnitz, Gera, Rostock, Brunswick, Hamburg, and Lübeck, the technical schools in Frankenberg and Mittweida, the 30 royal and provincial schools of trades in Prussia, the superior school for artisans in Chemnitz, the commercial and industrial art schools in Munich and Nuremberg, the art-industry school in Offenbach, the 8 art and architectural schools in Prussia, the 14 architectural schools in the other states, the 8 superior weaving schools, the royal school of pattern drawing in Berlin, the school of modeling and ornamental and pattern drawing in Dresden, the 21 navigation schools, and the numerous inferior schools of commerce and trades; in France, the 12 professional schools (*écoles professionnelles*), the schools of arts and trades (*écoles des arts et métiers*) at Aix, Angers, and Chalons-sur-Marne, the courses of instruction in the application of the sciences to industry, and in drawing, in various cities, the watch-making schools at Cluses and Besançon, the school of tobacco-manufacture and the superior commercial school in Paris, numerous inferior commercial schools, and the 42 hydrographic schools (for the instruction of seamen for the mercantile marine); in Italy, the 74 technical or trades institutes (*istituti tecnici, istituti industriali e professionali*) of the second grade, the royal superior commercial school of Venice, the 23 nautical institutes and schools, and the inferior schools of special trades; in the Netherlands, the 42 intermediate schools for the working classes, the 30 drawing and handicraft schools, the school of trade and industry in Amsterdam, the school for architects at Bois-le-Duc, and the 9 navigation schools; in Belgium, the superior commercial institute in Antwerp, the 26 industrial schools (including the provincial school of trade, industry, and mining at Mons), and the navigation schools in Antwerp and Ostend; in Switzerland, the technical institute in Winterthur, the watch-making school in Geneva, and the commercial schools in various places. According to the regulation of March 21., 1870, the Prussian schools of trades thereafter organized, consist of three classes (each with a course of one year), two lower and one higher; the last is the special class, and embraces four departments (one for the instruction of candidates for higher technical institutions, one of architecture, one for mechanical trades, and one for chemical trades). The complete technical institutes in Italy have four departments (physico-mathematical, agricultural, commercial, and book-keeping); a few have a fifth department, the industrial. Those at Fabriano and Terni are schools of mechanics and construction. The institute at Girgenti has a department for the sulphur industry.—See Walter Smith, *Art Education, Scholastic and Industrial* (Boston, 1872); Thomas Twining, *Technical Training* (London, 1874); and Charles B. Stetson, *Technical Education* (Boston, 1876).

TEMPER, the disposition or constitution of the mind, in relation particularly to the affections and the passions. Good temper implies a serenity of mind, and a natural or habitual cheerfulness, which is not easily disturbed. It is opposed to peevishness and sullenness, which seem to be characteristic of certain minds. As good temper predisposes to docility, so ill-temper is directly antagonistic to it; hence, the educator must cultivate the former in the mind of his pupil, and strive to eradicate the latter. In dealing with this fault, the utmost patience is requisite; since any exhibition of ill temper on the part of the educator will, from the force of example, as well as from the additional irritation caused by it, aggravate the difficulty, and foster the natural failing in the pupil's mind into a confirmed vice. Allowance must always be made for the natural peculiarities of children; since these cannot be immediately or forcibly repressed, but must, by careful training, be brought under self-control, which is one of the earliest lessons to be taught, but one of the last objects attained in education. Discouragement may sometimes take the form of ill temper; and, in such a case, the teacher must make concessions, and give special attention to remove the feeling and restore confidence. A violent, irascible, or stubborn temper in the pupil is to be met with calmness and firmness on the part of the teacher; and very often the marked contrast between his manner and that of the pupil will serve to recall the latter to himself, and excite in his mind a feeling of shame at his haste or violence. Nothing will tend so strongly as this to cure the vice, since it really leads the child to punish himself for his fault. Ill temper that takes the form of obstinacy, is the most difficult to deal with; and it is this that Locke reserves as the special and only case for the use of the rod. A resort to this should not, however, be hastily made, and will scarcely ever be needed, if the circumstances admit of persistent discipline of another kind by the educator. In school, unfortunately, this is not always the case, the teacher being obliged promptly to choose between the immediate conquest of his stubborn pupil, or the disorganization of his school. (See Corporal Punishment.)

TENNESSEE, one of the southern states of the American Union, admitted in 1796. Its area, according to the federal census, is 45,600 square miles; and its population, in 1870, was 1,258,520, of whom 936,119 were whites, 322,331, colored persons, and 70, Indians.

Educational History.—The first incorporated seminary of learning in the valley of the Mississippi was founded at Nashville, in 1785. In 1806, this was raised to the rank and title of Cumberland College, and, in 1826, became the University of Nashville. In 1794, Blount College, at Knoxville, was incorporated; and, immediately afterward, Greene College. In 1795, Washington College was founded. In 1806, an act of Congress provided that the state should appropriate 100,000 acres for the use of two colleges to be established, one in east, and one in west Tennessee; 100,000 acres for academies, and 640 acres in each tract 6 miles square, when existing claims would permit it, for the use of schools. The first attempt to create a school fund was made in 1823, when the vacant lands north and east of the congressional reservation line were sold, and the money was paid into the Bank of Tennessee, to "remain and constitute a perpetual and exclusive fund for the establishment and promotion of common schools in each and every county in the state." The taxes on these lands were, also, to form a part of this perpetual fund. Considerable additions were made to the school fund by the act of 1827. In 1835, the revised constitution declared it to be the duty of the state to preserve the school fund inviolate, and to "cherish literature and science; knowledge, learning, and virtue being essential to the preservation of republican institutions." By the acts of 1837 and 1838, and those of subsequent years, the school fund was made a part of the capital of the Bank of Tennessee; and $18,000 of the dividends was annually set apart for the use of academies, and $100,000 for the support of common schools, the faith of the state being pledged for such annual appropriations. An act, passed in 1844 and amended in 1846, directed that certain school lands in the state should be sold, and the proceeds paid into the Bank of Tennessee. The principal was to be invested by the bank in the bonds of the state, if obtainable at par value or less, the interest paid by the bank or realized upon the investment, to be annually paid over to the districts or townships to which the lands belonged, according to the amount of deposits belonging to each. In 1858, the amount of the school fund to be made a part of the capital of the Bank of Tennessee, was limited to $1,500,000; while the fund was increased by the sale of lands for taxes, escheated lands, etc. The annual distribution, however, of the interest of this fund, which amounted to about $90,000, was not productive of much good, owing to the want of a proper school system, with competent officers to superintend it. In 1863, according to the last statement of the Bank of Tennessee, this fund consisted of $663,752.65 in gold and silver. This amount, "put up in kegs and boxes, and sealed", was removed from the state during that year, and nearly all of it was deposited in the different banks of Augusta, Ga.; and the committee appointed by the legislature to investigate the removal of the fund, reported that $50,000 of it must be looked upon as lost. It was further shown that, by the failure of the Tennessee National Bank, $200,000 of the $612,250 in U. S. 7-30 bonds, deposited as a part of the school fund, in 1866, was also lost.—The first attempt toward a well-considered public-school system was made in 1867; but, owing to the disturbed political condition of the state, it did not prove acceptable to the people. Under the law of 1867, four kinds of school officers were created,—school-fund commissioners, a state superintendent, county superintendents, and district directors. Teachers were examined and paid by the county superintendent, on the order of the district clerk. Separate free schools were maintained for white and colored persons between the ages of 6 and 20 years, the money for their maintenance (consisting of a yearly tax and the interest of the permanent fund) being paid by the state treasurer to the county superintendents. Whatever additional money was needed was to be raised by district taxes, or in any way which did not interfere with free tuition, prevention of which constituted a bar to the state appropriation. Many obstacles existed to the carrying out of the provisions of this law, chief among which were the want of a school census, the lack of reports of previous systems, the poverty of the people, the almost utter want of trained teachers, and the great destruction of school property caused by the war. The legislature, accordingly, in 1869—70, repealed the act of 1867; and the state returned to the "county system", by which each county was empowered to establish and maintain schools or not, according to its pleasure. The school fund, at that time, exclusive of interest. amounted to $1,887,154.36, of which $387,154.36 was derived from the sale of school lands. By an act subsequent to that passed by the legislature of 1869—70, the state treasurer was made state superintendent, *ex officio*; but as no special duties were assigned to him, and as he had no authority, the office was of little practical value. Aided, however, by the trustees of the Peabody fund, he engaged an assistant, who, in 1872, endeavored to awaken public interest on the subject of education. His report showed that, while in some counties considerable attention was given to the schools, not one-fifth of the educable children of the state had any facilities for acquiring even an elementary education. In 1873, it was directed that the school fund, amounting to $2,512,500, with the unpaid interest thereon to January 1., 1873, the whole estimated to amount to $3,269,606, should be funded into one bond, bearing 6 per cent interest payable semi-annually by the state treasurer. At the same time, a new school law was passed, which has continued in force to the present time.—The *state superintendents* have been, William Morrow, until 1873; John M. Fleming, from 1873 to 1875; and Leon Trousdale, now in office, appointed in 1875.

School System.—By an act of the legislature approved March 23., 1875, the governor is directed "to appoint a *state board of education* to consist of six members, two of whom shall be appointed for six years, two for four years, and two for two years; and after the expiration of their first terms of office, their successors shall be appointed for six years. The governor of the state shall be, *ex officio*, a member, and president of said board." It shall be the duty of the board to make a report to the assembly of the condition of the schools. The principal school officer is the *state superintendent of public instruction*, who is appointed by the governor for two years. He is required to discharge all the duties usually devolving upon that officer, and to make annually "a detailed report of his official proceedings." The county courts elect biennially *county superintendents*, whose duty it is to visit the schools in their respective counties, keep the school records, and see that the rules laid down by the state superintendent are duly enforced.

The salary of the county superintendent is fixed by the county court, and, therefore, varies considerably, sometimes to such an extent as to amount to a virtual annulment of the office. This undue power of the county court, in this and in other respects, enables it to thwart the general school law. *District directors*, three in number, are elected for three years, in each district. They employ teachers, exercise a detailed supervision over the schools, and disburse the school moneys apportioned to their districts. The total annual income of the permanent school fund is about $600,000. To this is added a poll tax of $1, and a tax of one mill upon every dollar of taxable property in the state. Whenever the money derived from the school fund and state tax is not sufficient to keep a public school for five months in the year, in any school-district, the county court is required to levy an additional tax for the purpose, or may submit the proposition to do so to a vote of the people. He may also levy a tax to prolong the schools beyond the five months; but this must not exceed the entire state tax. The schools are free to all persons between the ages of 6 and 18 years, residing within the school-district, the only distinction between the races being that "white and colored persons shall not be taught in the same school, but in separate schools, under the same general regulations as to management, usefulness, and efficiency." Colored children are counted alike with the white children in the apportionment of the school money; and adult colored persons are eligible as teachers, school directors, and county or state superintendents. The school course comprises orthography, reading, writing, arithmetic, grammar, geography, elementary geology of Tennessee, history of the United States, and vocal music, the last being optional. A feature peculiar to the school system of this state is that of consolidated schools, or schools in which the branches prescribed by law for the common schools are taught free of expense, in connection with other and higher branches, for which a tuition fee is charged. This method has tended to popularize the common schools by keeping them before that class of the people who ordinarily would send their children to distant localities for more advanced instruction. Of such schools, 174 were in operation in 1875.

Educational Condition. — The number of schools in the state, in 1875, was 3.942, of which 3,127 were for white children, 770, for colored children, and 45, unclassified. The *school revenue* was as follows:

From the state	$212,840.57	
" counties	360,369.87	
" other sources	167,106.19	
Total		$740,316.63

The expenditures were as follows:

For teachers' salaries	$582,918.11	
Building and repairing school-houses	44,406.44	
Salaries of county superintendents	16,384.64	
Other expenses	59,649.79	
Total		$703,358.98

The principal items of *school statistics* for the same year are the following:

Number of children between 6 and 18 years		426,612
Number of pupils enrolled in public schools		199,058
Average attendance		136,805
Number of teachers white, male	2,561	
" " " female	823	
" " colored, male	564	
" " " female	217	
" " unclassified	45	
Total		4,210
Average monthly salary of teachers		$30.85

Normal Instruction.—By the law of March, 1875, the state board of education is required to establish a normal school or schools; no pupil must be admitted therein who is under 16 or over 30 years of age, and who has not passed such examination as may be prescribed by the board of education. City superintendents, or county superintendents, on consultation with the directors of the school-districts of their respective counties, may recommend certain pupils of the public schools for admission to the normal schools; and the pupils so recommended, on passing a satisfactory examination, have precedence over all other applicants. Separate normal schools for white and colored students are authorized by the law. The Normal University, established under this law, was opened Dec., 1., 1875, at Nashville. The trustees of the University of Nashville gave the use of their college buildings, grounds, etc. for two years, and also the income of their permanent fund, and that of the Montgomery Bell Academy, amounting in all to $6,000 per annum, on condition that the academy should be made a model and training school to the proposed university. To this was added an annual appropriation of $6,000, for two years, by the agent of the Peabody fund. Normal instruction for colored students is afforded in the Nashville Normal and Theological Institute, the Freedmen's Normal Institute, at Maryville, Fisk University, the Central Tennessee College, at Nashville, and the normal and training school, at Knoxville. A normal school for the training of colored teachers has recently been established at Jonesboro, the building previously occupied by the Holston Male Institute having been purchased for its accommodation. There are, besides, normal classes in many of the higher institutions of learning in the state.—Though no provision is made by law for the support of *teachers' institutes*, they have been organized in several counties. There is also a *state teachers' association* which holds annual meetings, and which has already exerted an important influence upon the progress of popular education in the state.

Secondary Instruction.—There are many high schools and academies in the state, chiefly in the cities and larger towns; Nashville, Memphis, Shelbyville, Chattanooga, Gallatin, and Murfreesboro, each containing such schools or departments. There are many other secondary schools in the state, chiefly private schools or preparatory departments of colleges. There are, also, several business colleges.

Superior Instruction.—The chief colleges and universities of the state are enumerated in the following table :

NAME	Location	When founded	Denomination
Beach Grove College...	Beach Grove	1869	Non-sect.
Bethel College..........	McKenzie	1847	Cumb. Pres.
Central Tennessee Coll.	Nashville	1866	Meth. Epis.
Christian Brothers' Coll.	Memphis	1872	R. C.
Cumberland University	Lebanon	1842	Cumb. Pres.
East Tennessee Univ....	Knoxville	1840	Non-sect.
East Tenn. Wesl. Univ..	Athens	1867	Meth. Epis.
Fisk University.........	Nashville	1866	Non-sect.
Greeneville and Tusculum College..........	Greeneville	1868	Indep.
Hiwassee College.......	Sweetwater	1850	M.E., South
King College...........	Bristol	1868	Presb.
Manchester College....	Manchester	1856	Non-sect.
Maryville College......	Maryville	1842	Presb.
Mosheim M. and F. Inst.	Mosheim	1870	Luth.
S. W. Baptist Univ.....	Jackson	1874	Baptist
S. W. Presb. Univ......	Clarksville	1875	Presb.
Stewart College.........	Clarksville	1856	Presb.
University of Nashville.	Nashville	1785	Non-sect.
University of the South	Sewanee	1858	Prot. Epis.
Vanderbilt University..	Nashville	1873	M. E. South

There are several institutions for the higher education of women in the state; of which, 17 reported. in 1875, to the U. S. Bureau of Education, 119 instructors, and 1,467 students, 916 of whom were pursuing collegiate studies.

Professional and Scientific Instruction.—The Tennessee Agricultural College was established, in 1869, as a part of the East Tennessee University (q. v.). The average attendance is 300. The Nashville Normal and Theological Institute was opened by the American Baptist Home Mission Society in 1866. It is specially intended for colored pupils of both sexes. Theological instruction is also given in Vanderbilt University, at the Central Tennessee College, at Cumberland University, at Fisk University, and at Nashville Institute. A law school is maintained in Vanderbilt University, and at the Cumberland University; and a medical and surgical school, in connection with the University of Nashville and Vanderbilt University.

Special Instruction.—The Tennessee School for the Blind was established at Nashville in 1843, by an annual appropriation of $1,500 for 2 years. This was increased by private contributions; and, in 1846, a law was passed making two annual appropriations of $2,500. In 1848, the sum of $5,000 was directed to be paid out of the state treasury for two years. The civil war not only put a stop to further progress, but almost obliterated the school by entirely destroying the school building. In 1866, however, it was re-established by the general assembly; and, by liberal appropriations since then, it has been placed among the first institutions of the kind in the country. It has a library of 1,000 volumes. The Tennessee School for the Deaf and Dumb is located at Knoxville. It was established in 1844, and was maintained, for a long time, chiefly by voluntary contributions. It is now chiefly supported by an annual state appropriation of $5,000, and an additional allowance for each indigent pupil admitted. It can accommodate 150 pupils.

TEXAS, one of the southern states of the American Union, originally a part of Mexico, but acknowledged as an independent republic in 1836. It was admitted into the Union in 1845. Its area is 274,356 sq. m.; and its population, in 1870, was 818,899, of whom 253,475 were colored persons.

Educational History.—Six years before the admission of Texas into the Union, measures were taken to establish schools by setting apart a portion of the public lands in each county for school purposes. The first constitution of the state directed the legislature to provide for the establishment of schools, and created for their maintenance a permanent fund by confirming all previous grants of land and funds. In 1858, this fund was further increased by the sale of public lands; but the act authorizing this sale was subsequently repealed. The convention of 1866 made provision for the appointment or election of a board of education and a superintendent of public instruction; and the new constitution of the state, adopted in 1869, directed that the legislature should make suitable provision for the support of a system of public schools, "for the gratuitous instruction of all the inhabitants of the state, between the ages of 6 and 18 years." It also provided that a superintendent of public instruction should be appointed by the governor, with the consent of the senate for one term of four years, and afterwards should be elected by the people. Under this law, a nomination was made by the governor, but was not agreed to by the senate. The school bill, also, was rejected by the same body. Under the school law of August 13., 1870, each organized county became a school-district, and the 5 justices of the peace composing the county court, were constituted, *ex officio*, a board of school directors. They were required to appoint a board of school trustees and a board of examiners, in each county, to divide the county into as many sub-districts as might be necessary, to locate school-houses, and to levy a tax not exceeding one per cent on all taxable property, for the purpose of building school-houses. The inaction of the county courts, however, led to the enactment of a new law, April 24., 1871, by which the superintendent of public instruction, with the consent of the governor, was charged with the appointment of 35 supervisors of education, each of whom was intrusted with the control of a district composed of several counties. Each supervisor was authorized to appoint a board of school directors for each county in his district, the duties of such boards being prescribed by the state board of education. The duty of subdividing the counties into school-districts was vested in the supervisor. This law remained in force till 1873, when a new law was substituted which contained so many unconstitutional features that it failed to receive the governor's approval. In 1874, the law was again changed, but the result was still unsatisfactory; and, August 19., 1876, an entirely new law was passed, which remains in force at the present time. The first state superintendent was J. C. De Gress, appointed in April, 1871; his successor was O. N. Hollingsworth, who was appointed in January, 1874, for 4 years.

School System.—The *state board of education* consists of the governor, comptroller, and secretary of state. The governor is, *ex officio*, president of the board, its only other officer being a secretary who is appointed by the board, "if, in their judgment, the educational interests of the state require" it, at an annual salary of $1,500. Upon this board devolve all the duties usually performed by such bodies, as well as those discharged in other states by state superintendents. In all matters pertaining to the schools, this board deals directly with the teachers and local school officers, except in the disbursing of the school moneys, which is done through the county treasurers. Within the several counties of the state, *school communities* are permitted to be organized for the purpose of availing themselves of the benefits of the public-school fund. These communities consist of any number of parents and guardians of children to be educated. They are required to make out and sign, in person, a list containing the names and ages of children to be instructed, and to send it with an application to the county judge. This officer, on satisfactory evidence that the list is correct and the application made in good faith, must sanction "the establishing of said school community, and designate it by its name and number." Any incorporated city or town, however, may have exclusive control of the public schools within its limits, provided it is so determined by a majority vote of the property tax-payers, in which case the council or board of aldermen is invested with exclusive power to maintain, regulate, control, and govern all the public free schools established within the limits of said city or town. Three *trustees* are appointed in each school community by the county judge, whose duties are to employ teachers, and look after the general interests and management of the schools under their charge. County *boards of examiners* are also appointed by the county judge annually. They consist of "three well-educated citizens of the county," who are required to examine applicants for the position of teacher, the certificate resulting from such examination being given by the county judge on recommendation of the board of examiners. The available school fund is declared to consist of one-fourth of the "occupation and *ad valorem* taxes" assessed since March 30., 1870; one-fourth of all the "*ad valorem* and occupation taxes" that may hereafter be collected, each exclusive of the cost of collection; all poll taxes due since March 30., 1870, or collectable thereafter; the interest arising on any bonds and funds, and all the interest derivable from the sale of lands, previously set apart as a permanent school fund, and all conveyances, devises, and bequests of property, made by any one for the benefit of the schools. Separate schools are provided by law for white and colored children, the available school fund being divided between them *pro rata*. Sectarianism is strictly prohibited. The selection of text-books is left with the teachers, "subject to the approval of their community trustees, and having due regard to the convenience of the parents in respect to books already purchased." The daily school session is 7 hours, but may be extended by agreement between the teacher and trustees. The school year is for the same reason indefinite. All children between the ages of 8 and 14 years are entitled to the benefits of the public schools.

Educational Condition.—During the year 1875, public schools were maintained in 139 counties; but reports were received from only 97. In the latter, there were 2,924 schools, and the number of school-houses built during the year was 158. Owing to the vast extent of territory, the sparseness of the population, the indifference to the public schools in some parts of the state, and the want of reports from school officers, the items of school revenue for the year 1875 are not accurately reported. Two items only are given by the state superintendent to aid in making an approximate estimate of what the receipts should bo:

Amount levied by boards of school directors	$244,879
Additional amount necessary to be levied to meet outstanding liabilities due teachers for the year	$50,598

The agent of the Peabody fund has also distributed to six public schools the sum of $2,250.

The expenses incurred were as follows:

For teachers' salaries	$630,334
" sites, and building, repairing, and furnishing school-houses	59,358
For other expenses	36,544
Total	$726,236

The other principal items of *school statistics* for 1875, are as follows:

Estimated enrollment of school children (6 to 18 years)	184,705
" average attendance	125,224
" number of schools	3,898
" " " teachers	4,030
Actual enrollment in 97 counties	124,567
Average attendance " "	84,415
Number of teachers " "	3,100
Number of schools " "	2,924
Average teachers' salary per month	$53

Normal Instruction.—No system for the training of teachers has yet been devised by the state. The only institution which furnishes normal instruction is Wiley University, at Marshall, which has a department for the training of colored teachers. A *state teachers' institute* was organized in 1872, at the close of the educational convention held that year at Austin. This led to the organization of 25 county institutes the same year. Since that time, institutes have been held occasionally.

Secondary Instruction.—In 1875, twelve academies and seminaries were known to exist in the state, furnishing employment to 29 instructors, and instruction to 1,166 pupils. Preparatory schools existing independently of, or in connection with, the colleges of the state, reported, during the same year, an attendance of 1,350 students.

Superior Instruction.—The principal colleges and universities of the state are enumerated in the following table:

NAME	Location	When organized	Religious denomination
Austin College........	Huntsville	1849	Presb.
Baylor University....	Independence	1845	Baptist
Henderson College...	Henderson	1871	Non-sect.
Marvin College.......	Waxahachie	1873	Meth.
St. Joseph's College..	Brownsville	1868	R. C.
Salado College.......	Salado	1860	Non-sect.
Southwestern Univ...	Georgetown	1840	M. E. S.
Trinity University ...	Tehuacana	1870	Cumb. Pr.
Univ. of St. Mary....	Galveston	1856	R. C.
Waco University.....	Waco	1861	Baptist
Wiley University.....	Marshall	1875	M. Epis.

In 1875, there were nine institutions in the state for the superior instruction of women, three of which conferred degrees. Among the principal institutions of this kind, are the Andrew Female College of Huntsville, the Bryan Female Seminary of Bryan, the Chapel Hill Female College, the Lamar Female Seminary of Paris, the Galveston Female High School, and the Austin Collegiate Female Institute, the Baylor Female College of Independence, the Waco Female College, and the Nazareth Convent of Victoria.

Scientific and Professional Instruction.—The only institution for instruction of this kind, aside from that furnished by special departments in the colleges and universities, is the Agricultural and Mechanical College of Texas, which was established a few years since at Bryan. Some progress was made toward erecting buildings for its use; but, a discovery being made of defects in the law concerning it, work was entirely suspended in 1871. The Texas Medical College and Hospital at Galveston was incorporated in 1871. The American Dental College is situated at Austin. It was opened in 1873. Instruction in theology is also given in a special department of Baylor University.

Special Instruction.—The Texas Institution for the Deaf and Dumb was opened in 1857, at Austin. It is open for the education of every deaf-mute resident of the state between the ages of 10 and 20 years, if of sound mind, good character, and general good health. Board and tuition are furnished gratuitously by the state. The term of instruction is seven years, the branches taught being those which are common to such institutions. The Texas Institution for the Education of the Blind is situated at Austin, where it was founded in 1856.

TEXT-BOOKS, for educational purposes, are books designed to be used by pupils in connection with the instruction given by the teacher. Their purpose is threefold: (1) to aid the teacher, by affording to the pupil independent sources of information and instruments of study; (2) to aid the pupil, in acquiring habits of self-reliance in study; and (3) to enable the pupil to learn how to use books, as a means of self-culture. These objects dictate the mode of constructing school text-books; and should all be carefully kept in view by the teacher in the selection of books, so that they may be suited to the mental status and grade of culture of his pupils in regard to the following points: (1) language and style; (2) arrangement of topics and general treatment of the subject, and (3) adaptability to the time and general opportunities of the pupil.—The object of using text-books is often entirely defeated by a disregard of the first of these points. A text-book written in a style beyond the capacity of the pupil is not only useless, but positively injurious; since the pupil either becomes disgusted with the study and neglects it altogether, or he commits to memory the language of the book, under the impression that he is acquiring knowledge; and thus his mental habits are seriously, if not permanently, vitiated.—The following cautions should be particularly observed by teachers in the use of text-books: (1) the book should not be permitted to supersede the teacher, its use being always preceded, accompanied, and supplemented by oral instruction; (2) it should never be paramount, in the pupil's mind, to the subject, the impression being constantly inculcated by the teacher that it is the subject that is studied, and that the book is only an instrument of the study, or an auxiliary to it; (3) it should not be allowed to supersede the necessity of acquiring knowledge, as far as possible, by personal experience, particularly in elementary education. In advanced instruction, it will always be found that those will use text-books most effectively who have acquired the most knowledge without them. (See Oral Instruction.)

THEOLOGICAL SCHOOLS.—The earliest schools of this character, of which any authentic account exists, were the Jewish "schools of the prophets." (See Hebrews.) Schools for instruction in Christian theology sprung up according to ecclesiastical tradition, about the close of the apostolic period. At the close of the 2d century, the school of Alexandria began to be celebrated throughout the Christian world. (See Alexandrian School.) Other schools of the kind, though of less prominence, existed during the period of the ancient church at Antioch, Laodicea, Nicodemia, Athens, Edessa, Nisibis, Seleucia, Rome, and Carthage. At the end of the 5th century, nearly all of the schools of the East had greatly declined, or had become extinct. In the West, the *monasterium clericorum*, founded by Augustine, at Hippo, was the beginning of a diocesan seminary, and as such marks a considerable progress in the history of theological schools. A number of similar institutions arose in various countries of southern Europe, and served as the chief agency for training candidates for the secular priesthood; while the convent and cloister schools supplied whatever education was given to persons subjecting themselves to monastic vows. The chief study in the theological schools of this period was ecclesiastical Latin, Greek and Hebrew being rarely studied. A considerable improvement begins with the establishment of universities, after the middle of the 13th century. The appointment of faculties of theology in the principal universities had the effect to improve greatly the general education of the clergy; but, at the same time, it reduced to comparative unimportance the schools of the bishops and of the convents. Nevertheless, from that period to the present, the Roman Catholic Church has continued to recognize the three kinds of theological education already named. Faculties of catholic theology are at present (1877) connected with 8 universities of Austria and Hungary (Vienna, Gratz, Innspruck, Prague, Lemberg, Cracow, Pesth, and Agram); with 7 of the German Empire (Breslau, Bonn, Munich, Münster, Würtzburg, Tübingen, and Freiburg); with 1 in England (the new Catholic university of London, founded in 1875); with 1 in Belgium (the free Catholic university of Louvain); with 4 in France (the new free Catholic universities in Paris, Angers, Lyons, and Lille); and with 1 in Portugal (Coimbra). In France, there are, moreover, 6 isolated faculties under control of the government. At the Italian and Spanish universities the theological faculties have been abolished. Beside these faculties of theology, there are a number of independent theological schools, of which especially the *Collegio Romano*, in Rome, attracts students from all Roman Catholic countries. Episcopal seminaries in which theology is taught are connected with nearly all episcopal sees, and every order of monks has one or several theological schools for its own novices. In the United States, according to the Report of the Commissioner of Education for 1875, the Catholic Church had 18 theological seminaries, or theological departments of colleges. A faculty of Old Catholic theology has been established in connection with the university of Bern; and, in 1876, the majority of the Catholic faculty at the university of Bonn, were likewise Old Catholics. (See Roman Catholic Church.)

In the Greek Church, the standard of theological education is very low, not only among the monks, but among the secular clergy. The only faculties of theology connected with complete universities, are at Athens (founded in 1837) and at Czernowitz in Austria (founded in 1875). None of the Russian universities has a faculty of Greek theology, which is taught in the five ecclesiastical academies of St. Petersburg, Moscow, Kasan, Kief, and Wilna, and in the seminaries connected with the episcopal sees. Of schools of Greek theology, mostly in connection with the episcopal sees, there are, moreover, 1 in Austria, 5 in Hungary, 4 in Greece, 8 in Roumania, 1 in Servia, 1 in Montenegro, and a large number in Turkey.

Theological education among the Protestants of Europe has been not a little diversified as to method. In all the countries in which great universities have existed, professorships of various branches of theology have been maintained since the days of the Reformation. Hence, the clergy of the state churches have usually gone to the universities to obtain theological instruction. In the German Empire, faculties of Protestant theology are attached to the universities of Berlin, Bonn, Breslau, Erlangen, Giessen, Greifswald, Göttingen, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipsic, Marburg, Rostock, Strasbourg, and Tübingen. In Holland, there are three, at Groningen, Leyden, and Utrecht; in Denmark 1, at Copenhagen; in Sweden 2, at Upsal and Lund; in Norway 1, at Christiania; in Russia 1, at Dorpat; and in Switzerland 4, at Basel, Zürich, Bern, and Geneva. France has a faculty of Protestant theology supported by the state, at Montauban, and a free theological school at Paris (founded in 1874); and Austria, 1 at Vienna. Switzerland has 3 theological schools, at Lausanne, Neufchatel, and Geneva. Germany leads not only in the number, but also in the prominence and influence of the theological schools, which, to a larger extent than the schools of any other country, are visited by students from all parts of the Protestant world. While the evangelical churches in the United States, England, and other countries readily acknowledge the superior scholarship of German theological schools, they deplore the departure of many of them from the creed of the Reformation, and from what they regard as the fundamental doctrines of Christianity. In England, the theological instruction given at the universities of Oxford and Cambridge has been more uniform and conservative, but far less influential, than that of the German universities. In fact, owing to the peculiar organization of the English universities, each one being an aggregation of a number of colleges, there has been a lack of concentration and control in reference to theological study which has tended to keep the standard very low. In neither of the universities named has there been an organized theological faculty or a well-planned, obligatory course of instruction. As in literature and science, so in theology, the actual teaching has been mostly done by tutors. There have been, in both universities, professors of divinity and Hebrew since the 16th century, but the professors, as such, have had little to do with instruction or discipline. Attendance on their lectures was not obligatory, except in a few merely formal instances. For the purpose of being admitted to holy orders, it was necessary for Bachelors of Arts, to attend the lectures of the *regius* professor of divinity for a short time, unless they obtained a dispensation. In 1842, professorships of ecclesiastical history and of pastoral theology were established at Oxford. The university of Dublin was organized under a charter from Queen Elizabeth, very much after the model of the English universities. A *regius* professorship of divinity was founded in 1607, a professorship of Hebrew, in 1637, and a king's lectureship in divinity, in 1718. In 1838, a professorship of Biblical Greek was added, and, in 1850, a professorship of ecclesiastical history.

The fact that the English universities exclude from their advantages all students not members of the Established Church, has made it necessary for the various sects of Dissenters that desired theological instruction for their ministerial candidates, to establish institutions of their own. This has been done by the Independents, the Wesleyans, the Baptists, and, perhaps, some other religious bodies. In nearly all, if not all, institutions thus established, provision is made for preliminary classical instruction. The Scottish universities, with the exception of that of Edinburgh, were founded before the Reformation. After that event, a scheme of theological education was proposed, at the university of St. Andrews, which was theoretically a great improvement upon the irregular and incomplete methods of theological instruction previously prevailing in the universities every-where. St. Mary's College was appointed solely to the teaching of theology and the languages connected with it. The course of study was to be completed in four years, under the instruction of a principal and four professors, each of the professors having under his care only the students of one year. The students were required to attend the lectures of three professors every day during the continuance of their theological course. Although this scheme was not found in all respects practicable, yet it had its influence upon the other Scottish universities, at Glasgow, Aberdeen, and Edinburgh, in each of which, several professorships of divinity and auxiliary topics have been constantly maintained, with some effort towards systematic instruction. After the disruption of the Established Church of Scotland, the Free Church established a divinity school in Edinburgh, called the New College of Free Church.

A prime object recognized in the foundation of the earliest colleges in the United States, such as Harvard and Yale, was to provide general education for candidates for the ministry. No professors of divinity were appointed, nor were theological topics introduced into the courses of study; but the presidents of the colleges were usually ministers of distinguished ability, who were expected, by their presence and their preaching, to exert a wholesome religious influence upon their students generally, and to be able to give timely and special counsel to any young men among them who might contemplate devoting themselves to the work of the ministry. Dr. Dwight, at Yale College, taught theology in his Sunday sermons which were so prepared and arranged as to form, when completed, a body of divinity. Some candidates for the ministry went directly from the college into ministerial service, and others, without having attended college at all. But the more general custom was for ministerial candidates to pursue a limited course of theological reading and study, under the direction of some influential pastor.

As society became more settled, and the wants of the older churches became better defined, the necessity of schools specially devoted to theological instruction began to be felt almost simultaneously in several denominations. The first actual experiment in public theological instruction was commenced by the Rev. Dr. John M. Mason of New York, in 1804. Dr. Mason had, after graduation at an American college, and about a year spent in the private study of theology, gone to Scotland to pursue a more complete course in one of the universities. As a result, he, subsequently, when a pastor in New York city, felt called upon to devote a portion of his time to the systematic instruction of ministerial candidates, in the original languages of the Bible. He, also, delivered lectures on the standard topics of divinity. For years he carried on this course of instruction almost single-handed, in fact until disabled by failing health. The first regularly organized theological seminary in the United States was that formed by the Congregationalists at Andover, Mass., in 1808. A foundation had previously existed at New Brunswick, N. J., under the auspices of the Reformed Dutch Church, but it remained for a long time unoccupied. In 1812, the Presbyterians commenced their theological seminary at Princeton. In 1817, the General Theological Seminary of the Protestant Episcopal Church was founded in New York. — Since the dates named, most of the larger Churches of the United States have founded theological schools. The total number of theological departments and seminaries in the United States, according to the Report of the U. S. Commissioner of Education for 1875, was 123, having 615 instructors and 5,234 students.

As to the methods pursued in the theological schools of the United States, it may be remarked that no uniformity, but a general similarity, prevails. In nearly all, primary attention is given to the study of Hebrew and New Testament Greek, as the foundation of an enlightened Scriptural exegesis. In the departments of ecclesiastical history, and systematic and practical theology, instruction is given largely by lectures, with references to text-books, and collateral reading. In all the fully-organized seminaries, the course of study extends through three years, and is planned in reference to the attainments of graduates of colleges, although partial-course students are admitted on specified conditions.

THERMOMETRY, Educational. Human thermometry is the art of measuring the heat evolved by the body, and the science of calculating thereby a person's vitality and working power. Physicians now use thermometers to ascertain mathematically the existence and progress of disease, instead of depending upon conjecture, as formerly. The same may also be done by teachers, in order to appreciate exactly the working capacity of their pupils; to prevent the spread of contagious diseases in the school, and to warn ignorant or thoughtless parents of the beginning of illness in their children; and, moreover, to discover the existence of disease when it is purposely concealed. The means of doing this is afforded by *thermometry* and *thermography*, the instruments employed being a thermometer and a thermograph, to indicate and record the degree of heat. There are several kinds of thermometers. That is, however, of special value in education, the scale of which is based on some physical phenomenon, as the melting of snow. In the physiological thermometer, the health-point is marked *zero* or *norme*, as seen in the following *scheme of human temperature* (taken on the physiological scale).

ABOVE THE NORME	7°	Only two alleged cases.
	6°	Generally fatal.
	5°	Often fatal.
	4°	High fever.
	3°	Considerable fever.
	2°	Moderate fever.
	1°	Suspicious.
THE NORME	0	Standard of health
BELOW THE NORME	0.5°	Subnormal.
	1°	Depression.
	2°	Collapse.
	3°-4°	Algid collapse.
	4°-5°	Fatal.

There are different instruments adapted to different thermometrical researches: (1) the *physiological thermometer*, which, when introduced into a natural cavity, as the mouth, or into an artificial one, as the closed axilla, indicates the rate of evolution of the central heat; (2) the *surface thermometer*, used to differentiate the superficial heat of two bodies, or of two parts of the surface of the same body; (3) the *thermoscope*, which, in a few seconds, renders evident differences of temperature which could not otherwise be perceived (unless with the help of some very expensive thermo-electric apparatus; (4) the *hand*, an absolutely inexpensive apparatus, but of inestimable value to those who have early appreciated the importance of educating the senses. The *trained hand* can be used as a central or as a surface thermometer. It cannot, of course, give its findings in figures; but it adds, to a pretty accurate idea of the heat evolved, an estimate of the depth or superficiality of the inflammation, of the tension of the tissues, and of other signs that are like commentaries to the *ustion* (feverish burning). The hand has, morever, above every instrument, the advantage of being used, at will, for the most informal and unsuspected diagnosis, in greetings, etc.; and when such desultory exploration has revealed an anomalous degree of temperature, the thermometer may be used to ascertain the exact condition.—*Thermography* is the method of recording the phenomena of *ustion*, in the order most favorable to show their significance. *Normal thermography* is the work of the mother; *pathological thermography*, of the physician, aided by the mother or nurse; and *school thermography*, of the teacher, who thus contributes his share to the natural history of his pupils.—Human thermometry should constitute a part of every system of pedagogy studied in the normal school; so that every teacher may conduct his school, and teach his pupils, on this mathematico-physiological basis, ascertaining constantly the power of endurance of every pupil during the various exercises; for, since mental force is but converted physical force, it is measurable by the expenditure of caloric found necessary for the various intellectual processes.—See SEGUIN, *Temperature-Variations in Diseases of Children* (1871); *Prevention of the Spread of Contagious Diseases among Children by the Indications of Thermometry* (London, 1873); *Manual of Thermometry for Mothers, Nurses, Teachers, etc.* (N. Y., 1873).

THIEL COLLEGE of the Evangelical Lutheran Church, at Greenville, Pa., is under the care of the Pittsburgh Synod. It was founded by Lewis Thiel, as an academy, at Philipsburg, in 1866, chartered as a college, in 1870, and removed to its present site, in 1871. Its permanent endowment is over $60,000, chiefly derived from the benefactions of its founder. It has a library of nearly 4,000 volumes. The cost of tuition is $40 per annum. It has an academic and a collegiate department. A *ladies' course* has been also established, embracing the studies of the collegiate department, except that Greek is optional, and French may be taken in the place of German. In 1875—6, there were 6 instructors and 70 students (21 collegiate and 49 academic). The Rev. Henry W. Roth, A. M., is (1877) the president

TOPICAL METHOD. See CATECHETICAL METHOD.

TOUGALOO UNIVERSITY, at Tougaloo, Miss., near Jackson, was founded in 1869, and chartered in 1871. It was especially designed for the education of colored youth of both sexes, but is open to all. The expenses, including tuition, board, etc., are less than $12 a month. A farm of five hundred acres attached to the university, is cultivated mainly by the labor of students, who thus pay a portion of their expenses. It has in operation a normal, an intermediate, and a primary department, its normal department being recognized as one of the state normal schools. In 1875—6, there were 5 instructors and 217 students (normal and intermediate, 125; primary, 92). Prof. L. A. Darling is (1877) the president.

TRAINING, a department of education, in which the chief element is exercise, or practice; the object being to impart practical skill, or facility in any bodily or mental operation. No teaching can be effectual that is not supplemented by training; that is to say, not only is the understanding of the pupil to be addressed, but the principle of *habit* to be appealed to. (See HABIT.)

TRAINING SCHOOLS. See TEACHERS' SEMINARIES.

TRINITY COLLEGE, in Hartford, Ct., under Protestant Episcopal control, was chartered as Washington College in 1823, and opened in 1824. The name was changed in 1845. It has property to the value of over $1,000,000, a library of 18,000 volumes, and a valuable cabinet. There is a large number of scholarships, nearly all designed to aid students in preparing for the ministry of the church. Besides the classical course, in which the studies are all prescribed, there are special courses, leading to the degree of B. S. In 1876—7, there were 15 instructors and 103 students. The presidents have been as follows: the Rt. Rev. Thomas C. Brownell, D. D., 1824—31; the Rev. N. S. Wheaton, D. D., 1831—7; the Rev. Silas Totten, D. D., 1837—48; the Rt. Rev. John Williams, D. D., 1848—53; the Rev. Daniel R. Goodwin, D. D., 1853—60; Samuel Eliot, LL. D., 1861—4; the Rt. Rev. J. B. Kerfoot, 1864—6; the

Rev. Abner Jackson, D. D., 1867—74, who was succeeded, in 1874, by the Rev. T. R. Pynchon, D. D., the present incumbent (1877).

TRINITY COLLEGE, at Trinity, Randolph Co., N. C., founded in 1852, is under the control of the Methodist Episcopal Church, South. The name of the post-office is the same as that of the institution. The college is supported by tuition fees ($40 to $60 per annum) and funds contributed by the North Carolina Conference. It has property to the value of $45,000, and libraries containing 10,000 volumes. The chapel for public exercises is said to be perfect in acoustics, and the finest auditorium in the Southern states. The whole course of instruction is embraced in eleven schools: Latin, Greek, mathematics, English literature, natural science, mental and moral philosophy, modern languages, theology, engineering and architecture, analytical chemistry, and law. The studies of any school, or any special study, may be pursued exclusively, if desired. In 1875—6, there were 5 instructors and 140 students. The Rev. B. Craven, D. D., LL. D., has been the president from the organization of the college.

TRINITY UNIVERSITY, at Tehuacana, Tex., under the control of Cumberland Presbyterians, was organized in 1869, and chartered in 1870, its principal design being to furnish an educated ministry. It has an endowment of $15,000, and libraries containing about 3,000 volumes. It comprises a collegiate, a preparatory, and a commercial course, open to both sexes. In 1875—6, there were 13 instructors and 372 students (197 preparatory and 175 collegiate). The Rev. W. E. Beeson, D. D., is (1876) the president.

TRIVIUM. See Arts.

TROTZENDORF, Valentine Friedland, a distinguished German educator, born at Trotzendorf in Silesia, in 1490; died in 1556. His father's name was Friedland, which he changed into the name of his birthplace. After studying the classical languages at Leipsic, and spending five years with Luther, he entered, in 1523, the school at Goldberg as a teacher, and ultimately became its rector, in which position he continued till within two years of his death. Under his direction, the school of Goldberg became one of the most famous educational institutions of the age, being attended by scholars from many countries of Europe. It was eminently a classical school, German, the *real* studies, and mathematics occupying a subordinate place in the curriculum. Assistant teachers were seldom employed, teachers for the lower classes being generally selected from among the students in the upper classes. Biographies of Trotzendorf have been written by Pinzger (Heidelberg, 1825), and Löschke (Breslau, 1856).—See Barnard, *German Teachers and Educators.*

TRUANT LAWS, legislative enactments having for their object to prevent truancy from school. Such laws, particularly in large cities, have been of great service, especially in connection with compulsory attendance legislation. (See Compulsory Education.)

TUFTS COLLEGE, in Medford, Mass., chartered in 1852, and opened in 1854, is under Universalist control. It is supported by tuition fees ($70 a year), and the income of an endowment of over $1,000,000. The library contains over 16,000 volumes and 5,000 pamphlets. There are also good collections of minerals, shells, birds, and botanical specimens. There are twenty-seven scholarships in the gift of the college, fifteen of $60, and twelve of $100 each. It has a classical course of four years, a course for the degree of Bachelor of Philosophy, also of four years, and an engineering course of three years. A divinity school was organized in 1867. The theological students receive tuition and the use of rooms free. In 1875—6, the collegiate department had 10 professors, 1 instructor, and 73 students; namely, classical course, 56; engineering, 12; philosophical, 2; resident graduates, 3. The divinity school had 3 professors, 1 instructor, 3 lecturers, and 23 students. The whole number of *alumni* of the college was 225; of the divinity school, 21. The presidents have been as follows; the Rev. Hosea Ballou, 2d, D. D., 1853—61; the Rev. Alonzo A. Miner, D. D., LL. D., 1862—76; and the Rev. Elmer H. Capen, since 1876.

TURKEY, an empire, embracing extensive territories in Europe, Asia, and Africa, with an aggregate area of about 2,230,000 square miles, and a population of about 46,000,000. The greater part of the population of the whole empire are Mohammedans; but, in European Turkey Christianity predominates. The chief dependencies of the empire,—Servia, Roumania, and Egypt, are treated of in special articles of this work.

Educational History.—Up to 1846, public instruction was wholly left to the several religious denominations; but since then, the government has made some efforts to promote the cause of education, and especially to organize a school system for the Mohammedan population. A radical reform was attempted by means of a comprehensive school law, issued in 1869; but most of the provisions have, thus far, remained a dead letter. The Mohammedan schools, in particular, have hardly been improved in any way. The schools connected with the Greek churches have received some good teachers, educated at the university of Athens, or in the academies of Greece. The Armenian schools have been greatly benefited by the educational efforts of the Protestant American missionaries. The religious order of the Mekhitarists, which belongs to the United Armenian Church, and has its chief seats at Venice and Vienna, has done much for the education of the numerous Armenian population; and has, in particular, educated some of the best Turkish scholars in the government employ. French and Italian missionaries have established a number of Catholic institutions of different grades. The Jews of Turkey, with the aid of wealthy co-religionists in other countries, have also increased the number and improved the condition of their schools; and the progress of the Christian and Jewish schools has given a great impulse to educational progress among the native Turks. The provisions of the educational law of 1869 are as follows: Primary instruction is made obligatory for boys from 6 to 11, and for girls from 6 to 10 years of age. Every village and every ward of a town is required to have at least one primary school. Primary schools are of two kinds, — common primary and superior primary. Whenever the number of pupils is sufficient to warrant it, separate schools are to be established for Mohammedans and for Christians, for boys and for girls. Religious instruction in the Koran, or in the Christian religion, constitutes a part of the regular course. The school system is under the control of the Imperial Council of Education. The school authorities in the provinces and departments are composed of Mohammedans and of persons of other religious belief, the number of each being equal.

Primary Schools.—Primary schools, of some kind, are quite generally met with in towns, and even in villages; but reliable statistics in regard to them are wanting. The city of Constantinople had, according to the latest accounts, 454 primary schools of all denominations, with 33,000 pupils. The total number of superior primary schools in Turkey was 95, with about 7,600 pupils. The establishment of normal schools was also provided for in the law of 1869, previous to which time teachers generally received their education in the superior primary, or in secondary schools.

Secondary, Superior, and Special Schools.—The law of 1869 also provides for a complete system of secondary schools. Of these there are two kinds, — preparatory schools, and lyceums. Every town with more than 1,000 houses is required to have a preparatory school; and the chief town of every province, a lyceum. The course of instruction in the former lasts 3 years; in the latter, 6 years. The lyceum has a grammar division for 2 years, and a superior (4 years) division; the latter is again divided into a literary and a scientific section. The lyceum at Galata-Serai is under the direction of French scholars, and the medium of instruction is French. Various secondary schools have also been established by several Christian denominations. A university, organized after the model of the universities of continental Europe, and embracing, for the present, three faculties (literature, law, and natural science and mathematics), was opened, in 1870, in Constantinople. The medium of instruction is the Turkish language; but the use of French is permitted. Constantinople has a school of surveying and architecture, a school of engineering and artillery, a medical school, a law school, a military school, and a school of military surgery. On the island of Chalki, there is a naval academy. There are numerous schools of theology in connection with the mosques, for Mohammedans, and, in connection with Episcopal sees and monasteries, for the education of priests of the Greek, Catholic, and Armenian churches.

UNION CHRISTIAN COLLEGE, at Merom, Ind., founded in 1858, is under the control of the *Christian* denomination. It has an endowment of $100,000; of which $20,000 is at present non-productive. The cost of tuition is from $18 to $24 a year. Both sexes are admitted. The curriculum embraces an academic course, requiring 2 years, a scientific course, 4 years, and a classical course, 6 years. A preparatory school is also connected with the college. There is a course in normal instruction, also in music and book-keeping. In 1875—6, there were 9 instructors and 130 students. The presidents have been: Rev. N. Summerbell, D. D., 1860—65; Rev. Thomas Holmes, D. D., 1865—75; and Rev. T. C. Smith, M A., since 1875.

UNION UNIVERSITY, in the state of New York, incorporated in 1873, comprises Union College, with its preparatory classical institute and school of civil engineering, in Schenectady, and the Medical College, the Law School, and the Dudley Observatory, in Albany. Union college was incorporated in 1795, and was so called because several religious denominations co-operated in its establishment. It is supported by tuition fees (from $75 to $100 a year) and the income of endowments, amounting to about $428,000. It has a library of 18,000 volumes, and valuable chemical and philosophical apparatus and collections in natural history. Numerous scholarships have been founded for the benefit of indigent students. There is a classical, a scientific, and an eclectic course. The engineering school was founded in 1845. The extensive garden and farm of the college afford facilities for instruction in agriculture. Military drill and gymnastic training were early introduced. The Medical College was established in 1838, and the Law School in 1851. The Dudley Observatory, incorporated in 1852 and inaugurated in 1856, is furnished with the best astronomical instruments, and has a meteorological department. The number of instructors and students, in 1875—6, was as follows: Collegiate, 18 instructors and 175 students; engineering school, 4 instructors and 35 students; medical college, 16 instructors and 123 students; law school, 6 instructors and 93 students: total, 44 instructors and 426 students. The following have been the presidents of the College and University: the Rev. John Blair Smith, D. D., 1795—9; the Rev. Jonathan Edwards, D. D., 1799—1801; the Rev. Jonathan Maxcy, D. D., 1802—4; the Rev. Eliphalet Nott, D. D., 1804—66; the Rev. Lawrence P. Hickok, D. D., 1866—8; the Rev. Charles A. Aiken, D. D., 1869—71; and the Rev. Eliphalet Nott Potter, D. D., since 1871.

UNITARIANS are a body of Christians who reject the doctrine of the Trinity, and assert the absolute unity of God. They deny the deity of Christ and his equality with God the Father, but do not reject his divinity, or any exalted rank consistent with his subordination to God. They reject the doctrine of total depravity and moral inability, and of the necessity of a vicarious atonement. They have no written creed, and individual Unitarians differ greatly on many points. Arianism, originating in the 4th century, was the parent of Socinianism, in the 16th; and from the latter, Unitarianism has descended. Persecution confined Socinianism, at the close of the 17th century, to Transylvania, where there are now over 100 congregations of Unitarians, with nearly 60,000 members. They have a college at Klausenburg. They are governed by an ecclesiastical council and a bishop. In England, the growth of the denomination warranted the foundation, in 1825, of the British and Foreign Unitarian Association. In the United Kingdom, there are now not far from 400 congregations. The Unitarians have a college in London, and another in Manchester. The American Unitarian Association was also organized in 1825. It was incorporated in 1847, and has its headquarters in Boston. The National Conference of Unitarian and other Christian Churches was organized in 1865. In the United States, the Unitarians separated from the Congregationalists. They have about 350 or 360 congregations throughout the country, the denomination being most numerous in Massachusetts, especially in Boston and its vicinity, where it took its rise. Except in Transylvania, the Unitarians have a congregational form of church government. In the United States, the denomination has always been largely constituted from the most highly educated portion of the community; and its members have been noted for their public spirit, and their interest in educational and benevolent affairs. The Society for Promoting Theological Education (headquarters in Boston) was organized in 1816, and incorporated in 1831. It aims to enlarge the apparatus of theological instruction, and to afford assistance to meritorious theological students. The American Unitarian Association has a committee on theological education, and aids young men in preparing for the ministry. The Unitarian Sunday-School Society (Boston) was instituted in 1827. Since the early years of the century, the authorities of Harvard University have been largely Unitarians, but the institution has never been under denominational control. The Harvard Divinity School was systematically established in 1816. In 1876—7, it had 4 professors, 5 other instructors, 23 students, and a library of 17,000 volumes. The Meadville Theological School, at Meadville, Pa., was chartered in 1846, and organized in 1847. In 1876—7, it had 4 resident and 3 non-resident professors, 12 students, and a library of 12,000 volumes. Unitarians have a share likewise in the control of Antioch College, Yellow Springs, Ohio.

UNITED BRETHREN IN CHRIST. This church was founded by Philipp Wilhelm Otterbein, a minister of the German Reformed Church, who was born June 4., 1726, at Dillenburg, Germany, and, in 1752, came to the United States, being one of the six young men who accompanied the Rev. Michael Schlatter, the pioneer missionary of the German Reformed Church. (See Reformed Church.) The church which owes its foundation to him, originated in no doctrinal disputes, but was the result of the growth of vital piety in individual members. The name arose from the circumstance that, at a great revival meeting, when both Otterbein and Martin Boehm, a minister of the Mennonites, were preaching, Otterbein clasped Boehm in his arms, with the words, "We are brethren." In 1800, the words "in Christ" were added to "United Brethren," in order to distinguish the church from the Moravians, who were also called United Brethren. The church, in 1876, had, in 43 annual conferences, 1,952 ministers and 143,881 members. — When Otterbein, in 1774, organized, in Baltimore, an independent church, whose doctrines and discipline, with some slight modifications, became the doctrines and discipline of the United Brethren in Christ, one of the articles of the church provided for the establishment of a German school. The fathers of the church had, for a long time, serious doubts about the expediency of establishing denominational institutions for higher education; but, in 1845, the General Conference almost unanimously resolved "that proper measures be adopted to establish an institution of learning." In 1846, the Scioto Annual Conference appointed a committee to purchase from the Methodist Episcopal Church the Blendon Young Men's Seminary, at Westerville, O., and thus, Otterbein University (q. v.), the first college of the church, was established. In 1847, the Allegheny Conference resolved to establish an institution at Mount Pleasant, Pa., or Johnstown. It was finally located at Mount Pleasant; but, in 1858, the buildings were sold, and the interests transferred to Otterbein University. The seed thus planted rapidly took root. In addition to the institution already mentioned, the following have since been established: Hartsville University, Hartsville, Ind. (1851); Western College, Western, Iowa (1856); Westfield College, Westfield, Ill. (1865); Green Hill Seminary, Poolsville, Ind. (1869); Avalon Academy, Avalon, Mo. (1869); Smithville High School, Smithville, O.; Roanoke Classical Seminary, Roanoke, Ind. (1869); Lebanon Valley College, Lebanon, Pa. (1866); Lane University, Lecompton, Kan.; Philomath College, Philomath, Oregon; and Elroy Seminary, Elroy, Wis. (1874). The aggregate number of students in these institutions, during the year 1875—6, was over 1,000 males, of whom about 125 were preparing for the ministry, and about 600 females; the whole number, since their foundation, is about 15,000; and the total number of graduates, 300. The aggregate number of volumes in their libraries was 6,000; the endowment funds, collected and promised, amounted to $300,000. Co-education of the sexes has been the uniform rule in all the institutions of the church. As the fathers of the church had an impression that college education had a tendency to make men indolent, they connected a *manual labor department* with two or more of the institutions; but the project was soon found to be impracticable, and was, consequently, abandoned.—A still greater opposition than to the establishment of denominational colleges and high schools, was, for a long time, made to the establishment of theological schools. The opponents of these schools took the ground that men cannot and should not be "trained for the ministry," and the special schools of theology were represented by them as "priest factories." This feeling, however, has gradually lost ground, and has now almost died away. In 1847, the Allegheny Conference resolved that thereafter "a good theoretical and practical knowledge of English grammar, a general knowledge of geography, history (profane and ecclesiastical, ancient and modern), and theology should be a test for admission into the itinerancy." Soon after, a "course of reading for applicants to the ministry" was provided; and they were annually examined upon this, and promoted and ordained, provided their progress would permit. This course was enlarged and improved from year to year, and is still the policy of the church. In 1865, the bishops, in their report to the General Conference, suggested that some plan superior, if possible, to the present "course of reading" and imperfect method of examination, should be adopted, and enjoined upon the conferences. The committee of the General Conference on education reported in favor of recommending to the trustees of Otterbein University the propriety of connecting with that institution a theological department as soon as practicable; but, as this plan appeared to many too radical an innovation, the General Conference compromised on a recommendation to the trustees of the several colleges to connect with these schools *biblical classes*, embracing the course of reading recommended in the discipline of the church. In 1869, the General Conference arranged for a board of education, and instructed this board to establish a *Biblical Institute*. In 1871, this school was opened at Dayton, O., under the name of the Union Biblical Seminary. The sentiment in favor of a theological school increased so rapidly, that by the meeting of the General Conference, in 1873, every one of the annual conferences had endorsed it.—A board of education was appointed in 1873. It is to make annual reports of the condition of the educational work of the church, with such recommendations as may seem best for all its interests. The United Brethren have a well-organized Sabbath-school department. The number of Sabbath schools, in 1876, was 2,854, with 163,439 pupils, officers, and teachers. The denominational book concern in Dayton, O., publishes several periodicals, specially adapted to Sabbath schools. Nearly every conference is connected with some one of the colleges, and aids in its maintenance. A collection is annually taken up in each church for general educational purposes; while the colleges, through instrumentalities of their own appointment, are annually adding to their resources. The number of students in attendance is increasing; the ministers are making better preparations for their work; and the college graduates occupy influential positions in the church. Much of the credit of the educational progress of the church is due to the Rev. Lewis Davis, D. D., for eighteen years president of Otterbein University, and now (1877) senior professor in the Union Biblical Seminary.

UNITED EVANGELICAL CHURCH, the name of a Protestant state church in Prussia and most of the German states. It was formed, in 1817, by the union of the Lutheran and Reformed churches; and, in 1871, the entire population formerly connected with those churches, except about 60,000 Lutherans, belonged to it. Although the church has now been in existence for more than half a century, there is still a very great diversity in the views entertained in regard to the nature and extent of the Union. A large portion of the Lutherans, in particular, look upon it not as a new church, but merely as an administrative confederation of the existing Lutheran and Reformed churches. The church in Prussia was wholly under the administration of consistories appointed by the state until 1874, when the government began to carry into effect the principle of ecclesiastical self-government, by circle, provincial, and national synods.—As the recognized state church in Prussia and other German states, the United Evangelical Church co-operates with the government, to a very large extent, in the control of primary, and, to some extent, also, in that of secondary schools. (See Germany.) The faculties of Protestant theology (see Theological Schools) in all the German universities, except Rostock, Leipsic, and Erlangen, are in official connection with this church; and it is universally admitted that, through them, the church has theological learning at its command not surpassed by that of any other church.—Besides the theological faculties, through which candidates for the ministry receive their scientific education, the church has established a number of preachers' seminaries, some of which are connected with the theological faculties, while others are independent of them.—The church, during the short period of its existence, has displayed a remarkable zeal in the establishment of reformatory schools, among which the *Rauhes Haus*, founded by J. H. Wichern, now a member of the Supreme Ecclesiastical Council of Berlin, has gained a world-wide reputation, and served as a model for numerous other institutions in and out of Germany. Another of the institutions which owe their origin to this church, is that of the Protestant deaconesses, founded by Dr. Fliedner, in Kaiserswerth, who, though chiefly devoted to the nursing of the sick, are also conducting a number of reformatory, industrial, and missionary schools.—In Europe, the United Evangelical Church is confined to Germany; but, in 1840, a branch was established in the United States, which, in 1874, had 300 ministers and 40,000 communicants. The German language is still exclusively used in all the congregations. The church has a theological seminary in Warren Co., Mo., and another educational institution at Elmhurst, Ill.

UNITED STATES of America, the most powerful nation of the Western Hemisphere, and the largest republic in the world, having an area of more than 3,600,000 sq. m., and a population, according to the last decennial census, in 1870, of 38,925,598, consisting of 33,592,245 whites, 4,886,387 colored persons, 63,254 Chinese, and 383,712 Indians.

Educational History.—The character of the early colonists of North America, courageous, independent, and intolerant of oppression, would of itself furnish presumptive evidence that the cause of education in the New World was not neglected. Positive evidence on this point, however, is not wanting. The earliest records of the colonies attest the solicitude of the settlers for the proper instruction of their children. This is particularly true of the New England colonies; and a forcible illustration of it is afforded in the early school legislation of Massachusetts, particularly in its famous school law of 1647. (See MASSACHUSETTS.) A comparison of this law, which enunciates, as an important principle, the joint obligation of the family and the state to provide an education for the young, with the school legislation of the foremost European countries in the 18th century, entitles Massachusetts to a place in the front rank among the enlightened communities of that period. The history of some of the other colonies presents facts equally interesting and creditable. The most striking feature of the colonial school systems was the connection of the school with the church, the clergyman, in many cases, being the school-master. The Puritans, the Huguenots, the Cavaliers, the Dutch settlers, and others brought this principle with them to their new homes; and the strength of their religious convictions tended to perpetuate it. (For a fuller account of the educational history of the colonies, see the articles on the thirteen original states.)—When the independence of the United States was established, education was not among the subjects which were committed to the control of the national government; but each individual state engaged, in its own way, in the work of establishing and developing an educational system. Massachusetts, in the new constitution of 1780, and Connecticut, by its establishment of a school fund, in 1795, re-asserted the principles which had been proclaimed in the 17th century, and made it the duty of legislatures and magistrates to cherish the interests of public schools, grammar schools, colleges, and universities. New Hampshire, when amending its constitution in 1784, expressed its entire concurrence in the constitution of Massachusetts; and Vermont, in 1793, declared that a sufficient number of schools should be maintained in every town. Rhode Island, which remained under the colonial charter until 1840, and Maine, which was admitted into the Union in 1820, have since indorsed the same principles; so that the people of New England may be said to have been unanimous in their views and in their legislation on the subject of public education. In New York, the progress of the common-school system was not so rapid as in New England. The constitution of 1777 made an allusion to schools; but, in 1785, the legislature created the Board of Regents of the University of the State, designed to promote the establishment of academies and colleges; and, in 1795, Governor George Clinton laid the foundation of the common-school system, of which Horace Mann, in 1845, could say, "the great state of New York, by means of her county superintendents, state normal school, and otherwise, is carrying forward the work of education more rapidly than any other state in the Union, or any other country in the world." Pennsylvania, in 1790, required the legislature to provide for the establishment of schools throughout the state, in such a manner, that the poor might be taught gratis. New Jersey, in 1816, created a school fund, but a general system of state, county, and town supervision was not adopted until 1846. The new states of the North-West and on the Pacific have each built up a common-school system on the New England basis; and the plan includes, in every state except Ohio, a university or high seminary of learning. In the southern states of the Union, the progress of educational institutions has been less satisfactory. Thomas Jefferson, in 1779, drafted a bill providing a public-school system for Virginia, but it was not adopted til 1796, and then with a proviso which "completely defeated it." The constitution of 1851 applied one equal moiety of the capitation tax upon white persons to the purposes of education in primary and free schools; but, neither in Virginia, nor in any other Southern state, were there schools, of any grade, which could compete, in number or efficiency, with the best schools of the North. When the civil war broke out, in 1861, several of the Southern states were still entirely without any system of common schools. The rapid growth of the slave population for which no education was provided, placed the Southern states among the most illiterate countries of Christendom. After the close of the civil war, school systems rapidly developed in that section, most of them fully recognizing the essential principles of free popular education. Virginia, Tennessee, Kentucky, and Missouri have especially made progress in the organization of effective systems of public instruction; while, in most of the others, considerable progress has been made.—At the time of the Declaration of Independence, the schools of New England generally, and the great majority of the schools in the other original states, were of an exclusively Protestant character; and the reading of the authorized version of the Bible, the singing of hymns, the saying of the Lord's Prayer, or other religious services, at the teacher's discretion, constituted a part of the scholastic exercises. When the vast influx of Irish and German immigrants had given to many of the states a numerous Roman Catholic population, two objections were raised to the prevailing school system. Protesting against Catholic pupils' being obliged to listen to the reading of a sectarian version of the Bible, and to the use of hymns and forms of prayer not sanctioned by their Church, and arguing that, according to the principles of the Catholic Church, religious and secular instruction should go hand in hand, the Catholics asked for a division of the school fund, and thus commenced a heated controversy which is not yet ended. (See DENOMINATIONAL SCHOOLS.) This agitation has, on the one hand, led to the abandonment of all religious exercises in the public schools, except the reading of the Bible without note or comment; and even this now meets with considerable opposition, and, in some places, has been abolished. (See BIBLE.) On the other hand, the expression of public opinion has been very decided against the support of denominational schools by public moneys, and in favor of the continued support and encouragement of the common-school system on a free secular basis. The president of the United States, in his message to Congress, Dec. 7., 1875, advised, "that a Constitutional amendment be submitted to the legislatures of the several states for ratification, making it the duty of each of the several states, to establish and forever maintain full public schools, adequate to the education of all the children in rudimentary branches, within their respective limits, irrespective of sex, color, birthplace, or religion; forbidding the teaching, in said schools, of religious, atheistic, or pagan tenets, and prohibiting the granting of any school fund or school taxes, or any part thereof, either by legislative, municipal, or other authority, for the benefit or in aid, directly or indirectly, of any religious sect or denomination"; but this recommendation was not acted on. Properly speaking, the United States has no public-school system, the function performed by the general government having always been that of fostering public education without assuming any control of it. (See BUREAU OF EDUCATION.)

Congressional Land Grants.—The earliest action of this nature, was that of the ordinance for the government of the North-West Territory, passed in 1785. By this the sixteenth section (one square mile) in every township was set apart for the maintenance of common schools, this action being accompanied with the declaration that "religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged." The states which have received the 16th section under this law, are Ohio, Louisiana, Indiana, Mississippi, Illinois, Alabama, Maine, Missouri, Arkansas, Michigan, Florida, Iowa, Texas, and Wisconsin. In 1787, this ordinance was renewed, and the grant was increased by two townships of land to be given to each state "for the purpose of a university." In 1789, after the adoption of the federal constitution, this ordinance was confirmed; and, accordingly, every state that has been organized since the beginning of the present century, has received at least two townships for the encouragement of higher education, while Ohio received three—one while in its territorial condition, and two as a state; and Florida and Wisconsin each received four. In 1806, the first appropriation was made for the education of the Indians; and, from that time to 1870, the sum expended for this purpose has been $8,000,000. In 1836, the surplus fund in the United States Treasury, amounting to about $15,000,000 was loaned indefinitely to the older states for educational purposes; and, in many, this now constitutes a permanent school fund (United States Deposit Fund). By the act of 1841, sixteen states have received each 500,000 acres of land, as follows: Alabama, Arkansas, California, Florida, Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Oregon, and Wisconsin. A large portion of the proceeds of the sale of these lands was devoted to common-school purposes. From the beginning of the present century down to 1848, each state admitted into the Union has received the 16th section for the support of common schools. In that year, the 36th section was added to the 16th for the same purpose, the territory of Oregon being the first to receive it. Since that time, each new territory and state has received two sections. Under the acts of 1849, 1850, and 1860, a part of the public domain, amounting to 62,428,413 acres known as "swamp lands", was given to the states of Alabama, Arkansas, California, Florida, Illinois, Indiana, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Ohio, and Wisconsin. A portion of the proceeds of this land, also, was devoted to the cause of education. The land granted by the general government, from 1785 to 1862, amounts to nearly 140,000,000 acres; the proceeds of nearly all of which have been devoted to school purposes. In 1862, a further grant was made, each state receiving 30,000 acres for each senator and representative in Congress, the amount derived from the sale of such lands to be converted into a perpetual fund for the maintenance of at least one college in each state, in which the distinctive object should be, "without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The amount of land subject to the disposal of the states by this law, is 9,510,000 acres. Thirty-seven states have thus far (1877) taken advantage of the liberal provisions of this law; and many institutions have been opened, in most cases, independently, but in some, as departments of colleges or universities existing at the time. These are the institutions usually known as agricultural colleges; though erroneously, since the law for their foundation does not exclude classical studies, but expressly declares that the intention of the Government is to promote the "liberal" as well as practical education of the industrial classes. (See AGRICULTURAL COLLEGES.)

Bureau of Education, etc.—In 1867, the national bureau was established "for the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several states and territories, and of diffusing such information respecting the organization and management of school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country." (See BUREAU OF EDUCATION.)—In 1865, the Freedmen's Bureau was established by the government, for the purpose of watching over the interests of 4,000,000 slaves freed by the proclamation of emancipation, and preparing them for citizenship. In 1869, the Bureau was abolished, except the educational department, which was continued till 1870. The result of its five years' work has been the establishment of many institutions for the superior instruction of the freedmen in the Southern States, mention of which is made under their respective titles. The field abandoned by it has since been occupied by several societies and associations, chiefly religious. (See FREEDMEN'S SCHOOLS.)

Free-School Systems.—The idea of providing public instruction for all children at the expense of the community is by no means novel, for we find it in the celebrated school law of Massachusetts, already referred to; but the complete predominance of the principle is a fact of recent date. In 1865, rate-bills were in use in New York, Connecticut, New Jersey, Rhode Island, and Michigan; but a vigorous agitation against this system ensued; and, in 1871, the rate-bill had entirely disappeard. But while free common schools are now found throughout the American Union, and the citizens may be said to be practically unanimous in their support, a radical difference of opinion continues to prevail in regard to the extension which should be given to the application of the system. While in many states secondary and even superior schools are included within the plan, the restriction of state support to elementary schools has many supporters.—In the New England states, in Illinois, Indiana, Iowa, Missouri, Ohio, and some other states, the township has always been the political unit upon which has devolved the obligation to make provision for education; but, in most of the states, the *township*, for a time, almost disappeared as an element in the organization of the school system, the only divisions being (1) the county, and (2) the school-districts into which the county was divided. After an extended trial of the district system, most of the states have re-organized their school systems on the township plan. The township schools are under the control of local boards which are variously styled *school committees*, *school visitors*, *school directors*, *school trustees*, *school commissioners*, *school boards*, and *prudential committees*. These boards are generally elected by the people, but in some cases, they are appointed by the governor of the state. Of late, compulsory education laws have been passed in a number of the states; but while the principle appears to gain favor, it is found to be difficult to enforce the laws. Twenty-three states, in 1875, had each a state board of education for the general regulation of their public school systems; and all the states and territories (Delaware, since 1875) have state superintendents of public schools.—The expenses for the support of the public schools are defrayed (1) from state school funds (in 1875, $81,486,158 in the states, and $323,236 in the territories), accumulated, for the most part, from national grants of lands and from appropriations made, from time to time, by the state legislatures; (2) from state school taxes, which are raised in a majority of the states, and apportioned among the school districts; and (3) chiefly from local taxes. To these regular sources of income, must be added another which occupies an important position in the school finances; that is (4) donations. The total income of the states, according to the report of the Commissioner of Education for 1875, was $87,527,278, and of the territories, $1,121,672. There is an immense difference in the amount of expenditure for the schools of different states, ranging from $22 *per capita* of the school population, in some states, to $1 in Florida, Virginia, South Carolina, Tennessee, and Georgia. In the number and amount of gifts for the promotion of learning, this country is unequaled by any other on the globe. In 1875, the sum total of donations reported to the Bureau of Education in Washington was $4,126,562; in 1874, $6,053,304; in 1872, $11,226,977.—The total school population of the states and territories amounted, in 1875, to 14,007,522. The number enrolled, which in the public schools naturally comprises chiefly the population between the ages of 5 or 6 and 15, was 8,756,659; the average daily attendance, 4,251,808. The private schools in the states, as far as they were heard from, reported 180,635 pupils. In the northern and western states, there are but few native American children who do not attend school during any part of their lives; and, in most of these states, the enrollment of children (including those of private schools) exceeds the whole number between the ages of 5 and 15. (For detailed statistics, see SCHOOL CENSUS.)—The total number of teachers reported in 1875, was 249,262, a large majority of whom were females. The necessity of schools for training teachers is of comparatively recent recognition, but now the number of normal schools is rapidly increasing. (See TEACHERS' SEMINARIES.) They are supof an exclusively Protestant character; and the reading of the authorized version of the Bible, the singing of hymns, the saying of the Lord's Prayer, or other religious services, at the teacher's discretion, constituted a part of the scholastic exercises. When the vast influx of Irish and German immigrants had given to many of the states a numerous Roman Catholic population, two objections were raised to the prevailing school system. Protesting against Catholic pupils' being obliged to listen to the reading of a sectarian version of the Bible, and to the use of hymns and forms of prayer not sanctioned by their Church, and arguing that, according to the principles of the Catholic Church, religious and secular instruction should go hand in hand, the Catholics asked for a division of the school fund, and thus commenced a heated controversy which is not yet ended. (See Denominational Schools.) This agitation has, on the one hand, led to the abandonment of all religious exercises in the public schools, except the reading of the Bible without note or comment; and even this now meets with considerable opposition, and, in some places, has been abolished. (See Bible.) On the other hand, the expression of public opinion has been very decided against the support of denominational schools by public moneys, and in favor of the continued support and encouragement of the common-school system on a free secular basis. The president of the United States, in his message to Congress, Dec. 7., 1875, advised, "that a Constitutional amendment be submitted to the legislatures of the several states for ratification, making it the duty of each of the several states, to establish and forever maintain full public schools, adequate to the education of all the children in rudimentary branches, within their respective limits, irrespective of sex, color, birthplace, or religion; forbidding the teaching, in said schools, of religious, atheistic, or pagan tenets, and prohibiting the granting of any school fund or school taxes, or any part thereof, either by legislative, municipal, or other authority, for the benefit or in aid, directly or indirectly, of any religious sect or denomination"; but this recommendation was not acted on. Properly speaking, the United States has no public-school system, the function performed by the general government having always been that of fostering public education without assuming any control of it. (See Bureau of Education.)

Congressional Land Grants.—The earliest action of this nature, was that of the ordinance for the government of the North-West Territory, passed in 1785. By this the sixteenth section (one square mile) in every township was set apart for the maintenance of common schools, this action being accompanied with the declaration that "religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged." The states which have received the 16th section under this law, are Ohio, Louisiana, Indiana, Mississippi, Illinois, Alabama, Maine, Missouri, Arkansas, Michigan, Florida, Iowa, Texas, and Wisconsin. In 1787, this ordinance was renewed, and the grant was increased by two townships of land to be given to each state "for the purpose of a university." In 1789, after the adoption of the federal constitution, this ordinance was confirmed; and, accordingly, every state that has been organized since the beginning of the present century, has received at least two townships for the encouragement of higher education, while Ohio received three—one while in its territorial condition, and two as a state; and Florida and Wisconsin each received four. In 1806, the first appropriation was made for the education of the Indians; and, from that time to 1870, the sum expended for this purpose has been $8,000,000. In 1836, the surplus fund in the United States Treasury, amounting to about $15,000,000 was loaned indefinitely to the older states for educational purposes; and, in many, this now constitutes a permanent school fund (United States Deposit Fund). By the act of 1841, sixteen states have received each 500,000 acres of land, as follows: Alabama, Arkansas, California, Florida, Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Oregon, and Wisconsin. A large portion of the proceeds of the sale of these lands was devoted to common-school purposes. From the beginning of the present century down to 1848, each state admitted into the Union has received the 16th section for the support of common schools. In that year, the 36th section was added to the 16th for the same purpose, the territory of Oregon being the first to receive it. Since that time, each new territory and state has received two sections. Under the acts of 1849, 1850, and 1860, a part of the public domain, amounting to 62,428,413 acres known as "swamp lands", was given to the states of Alabama, Arkansas, California, Florida, Illinois, Indiana, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Ohio, and Wisconsin. A portion of the proceeds of this land, also, was devoted to the cause of education. The land granted by the general government, from 1785 to 1862, amounts to nearly 140,000,000 acres; the proceeds of nearly all of which have been devoted to school purposes. In 1862, a further grant was made, each state receiving 30,000 acres for each senator and representative in Congress, the amount derived from the sale of such lands to be converted into a perpetual fund for the maintenance of at least one college in each state, in which the distinctive object should be, "without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The amount of land subject to the disposal of the states by this law, is 9,510,000 acres. Thirty-seven states have thus far (1877) taken advantage of the liberal provisions of this law; and many institutions have been opened, in most cases, independently, but in some, as departments of colleges or universities existing at the time. These are the institutions usually known as agricultural colleges; though erroneously, since the law for their foundation does not exclude classical studies, but expressly declares that the intention of the Government is to promote the "liberal" as well as practical education of the industrial classes. (See Agricultural Colleges.)

Bureau of Education, etc.—In 1867, the national bureau was established "for the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several states and territories, and of diffusing such information respecting the organization and management of school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country." (See Bureau of Education.)—In 1865, the Freedmen's Bureau was established by the government, for the purpose of watching over the interests of 4,000,000 slaves freed by the proclamation of emancipation, and preparing them for citizenship. In 1869, the Bureau was abolished, except the educational department, which was continued till 1870. The result of its five years' work has been the establishment of many institutions for the superior instruction of the freedmen in the Southern States, mention of which is made under their respective titles. The field abandoned by it has since been occupied by several societies and associations, chiefly religious. (See Freedmen's Schools.)

Free-School Systems.—The idea of providing public instruction for all children at the expense of the community is by no means novel, for we find it in the celebrated school law of Massachusetts, already referred to; but the complete predominance of the principle is a fact of recent date. In 1865, rate-bills were in use in New York, Connecticut, New Jersey, Rhode Island, and Michigan; but a vigorous agitation against this system ensued; and, in 1871, the rate-bill had entirely disappeard. But while free common schools are now found throughout the American Union, and the citizens may be said to be practically unanimous in their support, a radical difference of opinion continues to prevail in regard to the extension which should be given to the application of the system. While in many states secondary and even superior schools are included within the plan, the restriction of state support to elementary schools has many supporters.—In the New England states, in Illinois, Indiana, Iowa, Missouri, Ohio, and some other states, the township has always been the political unit upon which has devolved the obligation to make provision for education; but, in most of the states, the *township*, for a time, almost disappeared as an element in the organization of the school system, the only divisions being (1) the county, and (2) the school-districts into which the county was divided. After an extended trial of the district system, most of the states have re-organized their school systems on the township plan. The township schools are under the control of local boards which are variously styled *school committees, school visitors, school directors, school trustees, school commissioners, school boards*, and *prudential committees*. These boards are generally elected by the people, but in some cases, they are appointed by the governor of the state. Of late, compulsory education laws have been passed in a number of the states; but while the principle appears to gain favor, it is found to be difficult to enforce the laws. Twenty-three states, in 1875, had each a state board of education for the general regulation of their public school systems; and all the states and territories (Delaware, since 1875) have state superintendents of public schools.—The expenses for the support of the public schools are defrayed (1) from state school funds (in 1875, $81,486,158 in the states, and $323,236 in the territories), accumulated, for the most part, from national grants of lands and from appropriations made, from time to time, by the state legislatures; (2) from state school taxes, which are raised in a majority of the states, and apportioned among the school districts; and (3) chiefly from local taxes. To these regular sources of income, must be added another which occupies an important position in the school finances; that is (4) donations. The total income of the states, according to the report of the Commissioner of Education for 1875, was $87,527,278, and of the territories, $1,121,672. There is an immense difference in the amount of expenditure for the schools of different states, ranging from $22 *per capita* of the school population, in some states, to $1 in Florida, Virginia, South Carolina, Tennessee, and Georgia. In the number and amount of gifts for the promotion of learning, this country is unequaled by any other on the globe. In 1875, the sum total of donations reported to the Bureau of Education in Washington was $4,126,562; in 1874, $6,053,304; in 1872, $11,226,977.—The total school population of the states and territories amounted, in 1875, to 14,007,522. The number enrolled, which in the public schools naturally comprises chiefly the population between the ages of 5 or 6 and 15, was 8,756,659; the average daily attendance, 4,251,808. The private schools in the states, as far as they were heard from, reported 180,635 pupils. In the northern and western states, there are but few native American children who do not attend school during any part of their lives; and, in most of these states, the enrollment of children (including those of private schools) exceeds the whole number between the ages of 5 and 15. (For detailed statistics, see School Census.)—The total number of teachers reported in 1875, was 249,262, a large majority of whom were females. The necessity of schools for training teachers is of comparatively recent recognition, but now the number of normal schools is rapidly increasing. (See Teachers' Seminaries.) They are supplemented especially by Teachers' Institutes, which have become a prominent and universal feature of the American school system. The highest average monthly compensation of male teachers is $113 (in Massachusetts), the lowest $27 (in Alabama); the highest compensation of female teachers $100 (in Arizona); the lowest in Maine, $18. Alabama, Delaware, Kentucky, Nevada, and Texas report the same payment of salaries for male and female teachers.

Grades of Instruction. — The division of schools into the three grades of primary, secondary, and superior schools does not fully correspond, in the United States, to that usual in most of the European states. American colleges and universities, which are designated as superior schools, correspond, on the whole, to the higher classes of the gymnasium rather than to the university of continental Europe. (See College, and University.) The boundary line between secondary and primary schools is not sharply drawn; and the difference in the names applied in different states and cities to the subdivisions of elementary schools renders an account of primary and secondary instruction of the United States exceedingly difficult. In New York City, the elementary schools are divided into primary and grammar departments. In Philadelphia, the schools are divided into four grades or departments,—primary, secondary, grammar, and high. In Boston, Cleveland, and Chicago, the departments of the schools are high, grammar, and primary; in Cincinnati, they are known as high, intermediate, and district; and in St. Louis as high, normal, and district. In nearly all the cities, the several departments of elementary instruction are divided into grades; and, even in the smaller towns, grading is quite commonly adopted, though some states report that the progress of the grading system is but slow. The *kindergarten* is rapidly gaining favor as an institution for preparing young children for the primary school; and, at the close of 1875, the number was reported as 95, against 42 in 1873, with 2,809 pupils, against 1,272 in 1873.—Within the last twenty years, the public high school, both for boys and girls, has become the favorite method of securing secondary instruction; and, in the western states, it is now almost the exclusive method. (See High Schools.) In Michigan and Indiana, the public high schools already have a recognized position as proper feeders of the freshman classes in the universities of these two states; and several others of the western states are taking measures to adopt the same system; while, throughout the eastern states, the public high school is supplying a demand which it is beyond the power of the endowed or tuition schools, usually known as academies, to meet. In New York and Maine, an alliance has been effected between a number of academies and the state and city systems, and the same is now attempted in Texas. The total number of secondary (endowed or tuition) schools reported to the Bureau of Education, at Washington, in 1871, was 638, with 80,227 pupils; in 1873, 944, with 118,570 pupils; in 1875, 1,143 with 108,235 pupils. Of the 1,143 institutions, in 1875, there were 215 for boys, 311 for girls, and 617 for boys and girls together. The number of preparatory schools reported in 1875 was 102, with 12,954 pupils. The schools for the superior instruction of women have increased with a rapidity which is one of the most marked features of the educational progress of the United States. The number of institutions rose from 33 in 1870 to 222 in 1875; the number of teachers, from 378 to 2,405; the number of pupils, from 5,337 to 23,795. The aggregate number of graduates in 1875 was 17,379; and the number of degrees conferred, 490.—The number of universities and colleges is also rapidly increasing, being, in 1875, 355, against 266 in 1870. The number of instructors, in the same time, rose from 2.823 to 3,999; and of pupils, from 49,163 to 58,894. An elevation of the standard for admission was proposed, in 1873, by some of the leading colleges, and has since made considerable progress. There is, at the same time, a strong disposition to relinquish the rigid uniformity of the old college curriculum, and to allow the pupils a greater liberty in the selection of their studies. An organization for holding annual intercollegiate contests in oratory was formed, in 1874, in Illinois; and, in 1875, a kindred association was organized among the students of some of the eastern colleges. (See College.)

Professional and Special Schools.—All classes of professional schools are now increasing in the United States with great rapidity. In 1870, there were 17 schools of science, with 1.413 students; while, in 1875, there were 74, with 7.157 students. The schools of theology, in the same period, increased, from 80, with 3.254 students, to 123, with 5.234 students; the law schools, from 28 to 43; the schools of medicine, from 63 to 106. There were, in 1875, also 41 institutions for the deaf and dumb, with 5,087 pupils; 29 institutions for the blind, with 2,054 pupils; 154 orphan asylums, with 14.118 inmates; 17 soldiers' orphans' homes, with 2,382 inmates; 12 infant asylums, with 2,816 infants; 24 industrial schools, with 5.268 inmates; 47 reform schools, with 8,111 male and 2,559 female inmates. (For a fuller account of these institutions, see the articles Agricultural Colleges, Blind, Education of the, Deaf-Mutes, Industrial Schools, Law Schools, Medical Schools, Orphan Asylums, Pharmaceutical Schools, Reform Schools, Scientific Schools, and Theological Schools.)

Educational Periodicals.—A list of all the educational periodicals which appeared after 1811 and prior to 1865, is given in Barnard's *Journal of Education*, 1865. In 1876, 116 educational periodicals were issued in different parts of the Union.

Literature.—One of the most valuable sources of information for the history of education in America is Barnard's *American Journal of Education* (begun in 1856; 24th vol., 1876). Since 1867, the official reports published by the U. S.

Bureau of Education present the material for a knowledge of the educational condition of the country with a completeness which leaves little to be desired, and are worthy of a comparison with the official publications of any country of Europe. See also GILMAN, *Education in America*, 1776—1876, in *North American Review*, 1876; LAWRENCE, *Educational Progress*, in *Harper's Monthly*, Nov., 1875.—Among foreign works on education in the United States may be mentioned the report made to the English government by the Rev. James Fraser, who, in 1865, spent six months in studying the educational institutions of the country; LAVALEYE, *L'Instruction du peuple;* HIPPEAU, *L'Instruction publique aux États Unis;* WIMMER, *Die Kirche und die Schule in Nord-Amerika* (Leips., 1853); SCHAFF, *Amerika, die politischen, socialen und kirchlich-religiösen Zustände* (Berlin, 1854); DULON, *Ueber Schule, deutsche Schule, amerikanische Schule und deutsch-amerikanische Schule* (Leips., 1866); TROSCHEL, *Volkscharakter und Bildungsanstalten der Nordamerikaner* (Berlin, 1867); FRANCIS ADAMS, *The Free School System of the United States* (London, 1875); RIGG, *National Education* (London, 1873).—On the peculiar features of the American school system, see *A Statement of the Theory of Education in the United States of America* (Washington, 1874).

UNIVERSALISTS are distinguished from other Christians by their belief in the final salvation of all human souls. Rev. John Murray, who came from England in 1770, is regarded as the founder of the denomination in this country; but no general denominational organization was made until 1785. The organization and government of the body are essentially congregational. Societies and churches are in many respects independent. The present organized strength of the denomination is exhibited in the following summary for the United States and Canada: 1 general convention; 22 state conventions; 69 associations; 880 parishes, embracing 41,029 families; 656 church organizations, having 32,947 members; 640 Sunday-schools, having 59,463 teachers and pupils; 756 church edifices, with a property, above indebtedness, of $7,465,495; and 706 ministers, including licentiates and the superannuated. The early preachers of the denomination were not generally men of liberal education. They even looked with distrust upon colleges and divinity schools, because of the support which these institutions gave, directly or indirectly, to religious doctrines, which Universalists deemed false and pernicious in their influence. The free-school system of instruction received, however, the hearty approval of the growing denomination, as being in perfect harmony with its cherished belief in the common nature and common destiny of man. Universalists have ever, therefore, been steadfast and zealous in their defense and support of common schools. Many faithful and laborious school superintendents and teachers are found among the clergy and educated laymen. They would retain the Bible in the schools, but would be unwilling that it should be used and interpreted in the special interest of any denomination. They would have education Christian, but not narrowly sectarian. In the first efforts of Universalists to establish schools under their control and patronage, they were mainly desirous of founding institutions which, while they should be Christian, should be kept free from obnoxious religious teachings and hurtful superstitions. They detested illiberality and bigotry, and were tardy, perhaps, in comprehending the full duty which, in the matter of education, a Christian denomination owes alike to itself, to the church, and to the world. In later years, they have manifested much interest and zeal in founding and endowing denominational schools. In not a few cases, schools have been commenced and continued for a time, and then closed from lack of patronage or endowments. Sometimes, enterprises begun have been merged in others that promised a higher and better success. As the result of many efforts,—some abortive, and others partially successful,—Universalists have now under their control, seven academies, five colleges, and two divinity schools.—The first successful movement to found an institution of learning, was made in the state of Maine in 1830, under the guidance of the Rev. Wm. A. Drew, and the Rev. S. Brimblecom, men of high culture, and experienced teachers. It resulted in the incorporation of Westbrook Seminary, in 1831, and in the opening of a school for both sexes, under the instruction of the Rev. S. Brimblecom, in 1834. After many struggles, the seminary was permanently established, and its accommodations were made ample. It has earned and enjoys a wide reputation. The female department is collegiate in character, and degrees are conferred upon female graduates by state authority. In the same year, 1831, through the exertions of the Rev. Stephen R. Smith, Clinton Liberal Institute was incorporated, in the state of New York, and funds were raised to erect a suitable building. It was opened for both sexes in 1832, two years before the Westbrook Seminary was put in operation. It offers superior opportunities to students. The female department occupies a separate building. Both departments have been effective in educational work. Funds have recently been raised to erect a large edifice for the accommodation of both sexes. The other academies of the denomination are: in Vermont, the Green Mountain Perkins Institute, incorporated in 1848, and Goddard Seminary, chartered in 1863; in Massachusetts, Dean Academy, chartered in 1865; in Wisconsin, Jefferson Liberal Institute, incorporated in 1866; and, in Iowa, Mitchell Seminary, chartered in 1871. Males and females are admitted to all. The denomination has no academy for one sex only. Goddard Seminary has a very pleasant location. The school building is large, of commanding architecture, and affords excellent accommodations for students. Dean Academy is, in its buildings and appointments, unsurpassed by any institution of its grade in New England. Dr. Oliver Dean, whose name it bears, left a large bequest for its endowment.— Tufts College, in Massachusetts, chartered in 1852, and organized under the Rev. Hosea Ballou, 2d, D. D., its first president, in 1854, was the first college founded by Universalists. Its appointments and courses of study are those of an American university. Lombard University, in Illinois, was chartered as an academy, by the name of The Illinois Liberal Institute, in 1851. It was opened for students in 1852, received college powers by legislative enactment in 1853, and the name of Lombard University, with university powers, in 1857. St. Lawrence University, in Canton, N. Y., was chartered in 1856. Its collegiate department was opened and placed under the charge of the Rev. J. S. Lee, D. D., in 1859. The preparatory department was given up in 1864. Buchtel College, in Akron, Ohio (assets $300,000) the Rev. S. H. McCollester, D. D., president, and Smithson College, in Indiana (assets $100,000) were chartered in 1871. They have elegant and commodious buildings, with superior school accommodations. —Before theological schools were instituted by Universalists, young men desirous of entering the ministry, were accustomed to avail themselves of the instruction and libraries of influential clergymen. The first theological school known in the denomination, was the enterprise of a single individual, and was temporary in its duration. It was opened, in 1845, by the Rev. Thomas J. Sawyer, D. D., at that time principal of Clinton Liberal Institute. It was continued by him till 1854, during which time about 25 students were carried through systematic courses of theological study, and inducted into the Christian ministry. Among them, are some of the most highly esteemed clergymen of the order. St. Lawrence Theological School, a department of St. Lawrence University, was the first permanently established divinity school. It was chartered in 1856, and opened in 1858, under the charge of the Rev. Ebenezer Fisher, D. D., who still continues in the position. It has a good endowment, a large library, 3 professors, and, at the present time, has in attendance 25 students. Tufts Divinity School, connected with Tufts College, was chartered in 1857, and organized in 1868, —the Rev. Thomas J. Sawyer, D. D., principal. It has 4 regular professors, and 3 non-resident professors or lecturers; the present attendance of students, is 33.—The amount of property devoted to denominational schools,—including academies, colleges, and divinity schools, is estimated at $2,385,000. The number of teachers connected with them, is 99; and the number of students, 1,036.— Sunday-schools—reported as numbering 640—are, as a rule, maintained in connection with all the churches, and a deep interest is felt and manifested in them. The attendance of pupils is generally large, and the classification complete. Instruction is made easy and effective by the use of catechisms adapted to pupils of different ages, uniform lesson and other papers, and well-selected libraries. State and other Sunday-school organizations, the normal training of teachers, public meetings, celebrations, exhibitions, and concerts manifest and intensify the interest felt by young and old in this class of schools, which are regarded as an effective means of imparting religious instruction. There is, at the present time, no organization called an education society, connected with the Universalist body of Christians; but each state convention is, by constitutional provision, required to devote special attention to the educational interests of the denomination, within its territorial limits, including Sunday-schools and the best methods for their management; and the trustees of the General Convention are directed to present in their annual report "a general statement as to the condition and wants of the church, with respect to education and whatever else concerns its interests, with such suggestions as they may deem proper." It is also provided that "every school, academy, or college, maintained at its expense, or conducted under the management of Universalists, shall send a copy of its annual report to the secretary of the state wherein it is situated, and to the secretary of its convention. The General Convention controls, also, the expenditure of the income from the so-called Murray Centenary Fund, of $120,000, which is appropriated to aid in the education of the clergy, and for other purposes connected with the extension and upbuilding of the Church. The amount of convention aid rendered to students in 1876, was $7,200. The denomination has been honored by the services of teachers of distinguished ability, great experience, and wide reputation. The Rev. T. Clowes, LL. D., one of the early principals of Clinton Liberal Institute, was a superior scholar, and noted for critical and learned research; the Rev. D. M. Knapen is the author of a work on mathematics, and Prof. George Robert Perkins, LL. D., the author of valuable mathematical text-books. The Rev. H. B. Maglathlin is known as the editor of the Greenleaf series and of other mathematical works. The Rev. Otis A. Skinner, D. D., second president of Lombard University, as a teacher, and as a superintendent of schools, and for eminent services in raising funds for the establishment of Tufts College, is held in grateful remembrance. Prof. J. V. N. Standish, of Lombard University, is widely known as a teacher of mathematics, and as a conductor of teachers' institutes. The Rev. J. S. Lee, D. D., a graduate of Amherst College, in 1845, has, in various capacities, given 28 years to educational work in the Universalist denomination. The Rev. James P. Weston, D.D., has, also, been 28 years a teacher in denominational schools. The Rev. Alonzo A. Miner, D. D., LL.D., is distinguished as a divine and a reformer, as well as a veteran educator. He opened, and successfully taught for several years, the Unity Scientific Military Academy, and was the second president of Tufts College, retaining the position for 12 years. As a member of the Massachusetts Board of Education, and as a lecturer, he has also rendered valuable service to the cause of education.

UNIVERSITY, a name first given, in the middle ages, to institutions for superior instruction. In the second half of the 12th century, a free union of students of medicine was formed in Salerno (1150), and another of students of law in Bologna (1158). The students had equal rights with the professors in these unions; which soon attracted such crowds that, in Bologna, the studies of medicine and theology were added; and, in Salerno, those of law and philosophy. This was the origin of the modern European university. At the university of Bologna, as well as at the universities of Padua and Naples, which were early established, the study of law remained predominant, ecclesiastical and secular law (*decreta* and *leges*) being eagerly studied in order to obtain high offices in church and state.—In Paris, a university arose from the cathedral school, and, as the chief seat of scholasticism, soon attained the rank of the foremost university of western Europe. The formation of *nations* and of faculties exerted a decisive influence upon the further development of the university. As scholars from all parts of the Christian world flocked to Paris in large numbers, and the government of the state took no notice of them, they found it necessary to form national groups for the purpose of self government. Thus, the four *nations* of the Gallicans (including Spaniards, Italians, Greeks, and Orientals), the Picards, the Normans, and the English (including Germans and Northmen) were formed. The formation of special faculties was caused by the Mendicants' orders, which early recognized the importance of the rising university, and, as teachers of theology and ecclesiastical law, assumed, in regard to the *nations*, an independent position. In consequence of the complications which were produced by their teaching, the professors of theology (about 1270), and, somewhat later, those of medicine and of ecclesiastical law, formed a union, and in this way organized three distinct faculties. The faculties represented, therefore, special sciences; while the four *nations*, as a continuation and enlargement of the former cathedral school, represented the *trivium* and the *quadrivium*, or the preparatory sciences. Following, at length, the example of the other faculties, the *nations* gradually transformed themselves into the faculty of the liberal arts, which, for a time, occupied a position inferior to that of the older faculties. These developments made the university of Paris the great literary center of Europe; and, at times, it was attended by more than 20,000 students.—In Germany, the first university was founded by the emperor Charles IV. at Prague, in 1348. It was followed, in the course of the 14th and 15th centuries, by many others, as follows: that of Vienna (1365), Heidelberg (originally founded in 1346, but not opened until 1386), Cologne (1388), Erfurt (1392), Würtzburg, Leipsic, Rostock, Greifswalde, Freiburg, Treves, Tübingen, and Mayence. The German universities, which owed their establishment to the liberality of princes, became the chief nurseries of the humanistic studies, and thus prepared the way for the Reformation in the 16th century. The new high schools were called *universitates* (universities) not originally as *universitates literarum*, embracing the universality of sciences, but as *universitates magistrorum et scholarium* (the universal union of teachers and scholars). They were not regarded as strictly national institutions, but rather as high schools belonging to the entire Christian world. Their privileges, therefore, had to be sanctioned by the Pope; and the chancellor, without whose consent no academic degree was valid, exercised his functions in the name of the Pope. In regard to their constitution, the universities were entirely independent corporations. The *nations*, as well as the faculties, had their own statutes, seals, and treasuries. At the head of a *nation*, was a procurator; at the head of the entire university, a rector. The students lived in special halls, called colleges (in Germany, *bursæ*), in which they were provided with the necessaries of life, supported in their studies, and superintended in their daily life. Instruction was imparted by means of lectures and disputations. The independence of the universities led to the organization of a system of academic degrees, intended to mark the various steps from the maturity of the student to the qualification of the academic teacher. At the Italian universities, the students, for a long time, chose their own professors; but, gradually, the authorization to teach was limited to those who had been duly licensed, or acquired the degree of licentiate. After the Reformation in the 16th century, the number of universities in Germany rapidly increased, as every prince was anxious to have his own, and as there was, moreover, a rivalry between the Catholic, Lutheran, and Reformed churches. The Protestant universities, having no connection with the Pope, became altogether national institutions; and, gradually, the Catholic universities were likewise regarded by the state authorities as being exclusively subject to state jurisdiction. In the case of the faculties of Catholic theology alone, some rights of superintendence were conceded to the bishops of the country. Though stripped of their former independence, the universities retained, however, until the time of the French Revolution, a considerable number of privileges; and a remnant of academic jurisdiction has, in some countries, maintained itself to the present day.—The Latin language continued for a long time to be exclusively used in the lectures of the university, but, from the beginning of the 17th century, it gradually gave way to the native tongues. By this change, the universities became more intimately associated with the entire literary and educational progress of the European countries, and began to exert a more direct influence upon primary as well as secondary instruction.—While the European universities may be said to have been the leaders in the wonderful progress which the world's literature, in all its departments, has made during the 18th and 19th centuries, their course of studies has been steadily expanded. Though the mediæval division into four faculties has been generally retained, the number of subjects taught in each faculty has been greatly enlarged. In some universities, the faculty of arts or of philosophy has been subdivided into two sections; in some, new faculties (of political economy, or of natural sciences) have been added to these four traditional ones; in some, there are two distinct theological faculties (one Protestant and one Catholic); in others, the theological faculty has been abolished.—It is generally agreed that, in the present century, the universities of Germany have attained the highest stage of development. Recently, however, the Catholic Church has availed herself of the new educational law to establish a number of free Catholic universities which, as schools of superior instruction, have the same organization as those in other countries of Europe. All of them are under the sole and absolute control of the state government, and they represent the highest or superior stage of the system of instruction which the state organizes for the rising generation. The university, as a school of superior instruction, is sharply distinguished from the secondary school, or gymnasium. The state requires that many classes of its officers should have spent three or four years at a university; and admission to the university is made contingent upon passing a successful examination at one of the state gymnasia. (See GERMANY.) The universities of Switzerland, Austria, the Netherlands, Belgium, the Scandinavian kingdoms, Russia, and Greece, also those of Italy, Spain, and Portugal, agree substantially with the German institutions, having four or more faculties, and being schools of superior instruction. Those of recent origin, like the universities of Athens and Christiania, have been wholly fashioned after German models. The universities in the British isles, and in the British possessions, materially differ from those of continental Europe, and some of them confine themselves to examinations and the conferring of degrees. (See ENGLAND, SCOTLAND, IRELAND, CAMBRIDGE, LONDON, and OXFORD.)—The universities of France were abolished in 1793; and, in the school legislation of Napoleon I., the name University of France was used in a different sense, being applied to the entire system of public instruction. (See FRANCE.) The states of Central and South America have a number of institutions called universities, but most of them have nothing in common with the universities of Europe except the name. In Turkey, China, Japan, and a number of other countries, efforts have recently been made to organize, or re-organize, schools of superior instruction after the model of the European universities; but all these institutions are still in their infancy, or, at least, are not yet worthy of a comparison with universities. In the United States, the term *university* is generally used in the same sense as that of *college*. (See COLLEGES.) Information in regard to the universities of the United States is given in the special articles in this work on important institutions of that class. The Johns Hopkins University, at Baltimore, which was opened in 1876, is to be conducted after the German plan. The establishment of a National University, at Washington, to be, in the fullest sense of the word, an institution for superior instruction, has been for several years agitated. An account of the universities of each important country of the world, embracing the latest statistics, is given in the articles in this work upon the several countries. The articles on the different classes of professional schools (THEOLOGICAL, LAW, MEDICAL, PHARMACEUTICAL, etc.) refer to the development of the different faculties.—See MALDEN, *Origin of Universities and Academic Degrees* (London, 1835); H. VON SYBEL, *Die deutschen und die auswärtigen Universitäten* (Bonn, 1868); DE VIRIVILLE, *Histoire des universités en France* (Paris, 1847); BARNARD, *History of German Universities*, translated from KARL VON RAUMER (N. Y., 1859); SCHAFF, *Germany, its Universities etc.* (Phila., 1857); HART, *German Universities* (N. Y., 1874).

UNIVERSITY COLLEGE (London) was opened in Oct., 1828, under the title of *The University of London*. The object of its promoters was to found, in the metropolis, a seat of learning where all, without distinction of creed, might obtain a liberal education, whilst remaining under the care of their parents or friends at home. No religious instruction is given within the college walls, that being regarded as a home matter, for which parents and guardians must hold themselves responsible; and thus it has been found possible to admit on terms of perfect equality all races and creeds.

If the original intention had been adhered to, the college would have resembled a Scotch university, in which the teaching body and the body that grants degrees are the same; but, when, year after year, the application to the government for a charter giving the right to confer degrees, was resisted by the older universities, and by various medical bodies in the metropolis, a compromise was at length agreed to, in 1836. By this compromise, the institution which is now known as University College, resigned its first title of University of London in favor of a new body to be created by the Crown, which should confer degrees upon students coming up to be examined from such colleges, in town and country, as might, from time to time, be affiliated to the university. The close connection originally existing between University College and the University proper, has been maintained. about thirty-two per cent of the 2,665 degrees held by graduates at the end of 1873, having been conferred on students from the college.

In University College, there are faculties of arts, of laws, of science, and of medicine, with an engineering department, and a fine arts department. These are served by about 44 professors. In the session ending midsummer, 1875, there were 565 students in the faculties of arts, of laws, and of science, including the fine arts and the engineering departments, and 335 students in the faculty of medicine. In 1832, a school for boys was established in connection with the college, and placed under the head-mastership of the late professors Key and Malden. In this school, there were, in 1874—5, 706 pupils, the greatest number in any one term that session being 589. Among the professors in the college, there have been many men of high eminence. Of these may be mentioned Augustus De Morgan, who, for 34 years, was professor of mathematics. Many of his pupils afterwards, at Cambridge, achieved the highest honors, four, at least, becoming senior wranglers, among them, Todhunter and Routh. — The entire government of the college is vested in the council, a body of 24 gentlemen who are appointed by the members of the college from themselves, and of whom 6 retire every year; but the senate, which consists of the professors presided over by a member of council, often exerts, by its advice, great influence upon the decisions of the council. The presidents of council have been successively Lord Brougham, George Grote, and Lord Belper.

The college, as yet, has received no help from the public funds. It originated entirely in the efforts of private individuals. Its capital was subscribed in £100 shares, of which, in 1843, there were 1,710, the number of subscribers being 1,072. The original deed of settlement provided that the share-holders might receive a dividend not exceeding 4 per cent; but. as a matter of fact, no dividend was ever paid, and, in 1869, an act of parliament was obtained which divested the college of its proprietary character, and enlarged its powers by enabling it to give instruction in the fine arts, and to teach women as well as men. The subscribers, or those to whom they have transferred or bequeathed their shares, constitute, with the fellows and life-governors, the members of the college, and, at their annual meeting, fill the vacancies in the council. In the course of years, many of the shares had been ceded or forfeited, and lapsed shares were bestowed upon distinguished graduates of the college, styled *fellows*, or upon persons of eminence who might advantageously be associated in the government of the college, and who were styled life-governors. The first fellows were chosen in 1843; the life-governors are of much more recent origin, having been appointed subsequently to the act of parliament.

The fine art or Slade schools (called into existence by the munificent bequest of Mr. Felix Slade) have been very successful, so that already the accommodation provided is not sufficient. The number of students, male and female, in 1874—5, was 220. Ladies are, for the present, admitted equally with gentlemen to the classes of political economy, jurisprudence, Roman law, and geology. A ladies' association, with the concurrence of the council, arranges separate classes also for ladies (taught, for the most part, by the professors) in the following subjects: French, German, Greek, mathematics, Latin, Italian, history, hygiene, English literature, physics, and chemistry. In 1875—6, these classes numbered 17, and were attended by 394 ladies. Very few of the professorships are endowed; hence, many of the professors, having to rely solely on fees, are inadequately paid. A royal commission, two years ago, recommended that the college should be helped by government grants, both to extend its appliances for the teaching of science, and to augment the stipends of the science professors.

To the original share capital of the college, many donations and bequests have been added. Down to 1870, the expenditure on capital account amounted to £202,287. The income arising, in the same year, from endowments amounted to £2,978, appropriated, for the most part, to special purposes (as to scholarships and professorships). The amount received in fees, in 1874—5, was over £27,000, nearly one-half from the school for boys. These figures refer to every part of the college except the hospital.

The eastern portion of the buildings, about 400 feet in length, was erected first. In the center of this, is a handsome Corinthian portico, with a dome. During the last eight years, the south wing, which is occupied by the school, has been commenced, and nearly completed. By means of the Slade bequest, a portion of the north wing has also been built. The hospital, on the opposite side of Gower street, completes the quadrangle; it was opened in 1834. At University Hall, near the College, are rooms for 30 students; this is connected with the college, but under different management.— See *Penny Cyclopædia*, art. *University College; yearly Reports* and *Calendars* of the College; *Fifth Report of the Royal Commission on Scientific Instruction* (1874).

UNIVERSITY COLLEGE of San Francisco, Cal., founded in 1859, is under Presbyterian control. It embraces a primary, a higher English, a classical preparatory, and a collegiate department. Females are admitted to the lower departments. The cost of tuition ranges from $6 to $15 a month; but there is an extra charge for modern languages, book-keeping, drawing, and music. In 1874—5, there were 7 instructors and 90 students. The principals have been as follows: the Rev. Geo. Burrows, D. D.; the Rev. Peter V. Veeder, D. D.; the Rev. Wm. Alexander, D. D.; and the Rev. James Matthews, D. D., the present incumbent (1877).

UPPER IOWA UNIVERSITY, at Fayette, Iowa, under Methodist Episcopal control, was opened as a seminary Jan. 1., 1857, and chartered as a college in 1860. It is supported by tuition fees and the income of an endowment of $15,000. It has libraries containing about 2,000 volumes. Both sexes are admitted. There are six departments: collegiate (with a classical and a scientific course), preparatory, English, commercial, of music, and of fine arts. In 1875—6, there were 9 instructors and 243 students (deducting repetitions), as follows: collegiate, 30; preparatory, 56; English, 115; commercial, 48; music, 50; painting, 16. The presidents have been as follows: the Rev. William H.

Poor, A. M., 1856—7; the Rev. Lucius H. Bugbee, D. D., 1857—60; the Rev. William Brush, D. D., 1860—9; the Rev. Charles N. Stowers, A. M., 1869—70; Byron W. McLain, Ph. D., 1870—2; the Rev. Rhoderic Norton, A. M., 1872—3; the Rev. J. W. Bissell, A. M. (vice-president) 1873—4; and the Rev. J. W. Bissell, A. M., president, since 1874.

URBANA UNIVERSITY, at Urbana, Ohio, founded in 1850, is under Swedenborgian control. It had a large attendance of pupils of both sexes during the first ten years. At the outbreak of the war the attendance fell off, and the collegiate department was discontinued. The college was re-established, and the faculty re-organized in 1871. "The Union of Revelation and Science upon the basis of the theology given in the writings of Emmanuel Swedenborg is the distinctive principle of the New Church University." It is supported chiefly by tuition fees and annual contributions. It has an invested fund of $10,000, and about $20,000 subscribed toward an endowment of $50,000. There are extensive botanical collections, a cabinet of minerals and fossils, apparatus, and libraries containing 5,000 volumes. The university embraces three departments: the *grammar school*, the *college*, and the *school of theology*. The *school for girls* is to be re-organized as soon as the means can be provided. The college has a classical course of four years, and a scientific course of three years. The cost of tuition is from $36 to $60 a year. In 1875—6, there were 6 instructors and 34 students (17 collegiate and 17 belonging to the grammar school). The presidents have been: Milo G. Williams, A. M., 1853—7; the Rev. Chauncey Giles, A. M., 1858—69; the Rev. Frank Sewall, A. M., since 1870.

URSINUS COLLEGE, at Freeland, Montgomery Co., Pa., chartered in 1869 and opened in 1870, is under the patronage of the Reformed (German) Church. The post office is Collegeville. The college is chiefly supported by tuition fees (from $40 to $48 a year) and contributions. The institution has an academic or preparatory department, a collegiate department (classical course of four years and scientific course of 3 years), and a theological department. The libraries contain 6,500 volumes. In 1876—7, there were 10 instructors and 122 students (15 theological, 41 collegiate, and 66 academic). The Rev. J. H. A. Bamberger, D. D., is (1877) the president.

URUGUAY, a republic of South America, having an area of 69,800 square miles, and a population of about 300,000. The state religion is the Roman Catholic, to which almost the whole population belongs, but other creeds are tolerated. Uruguay has been an independent state since 1828.

The instruction given in the government schools, which are few, is of a very inferior kind. The foreigners,—Germans, French, English, and others, have their own schools, which are of a much higher order. A female school exists in connection with the convent of the order of Saint Francis of Sales, in Montevideo.

Secondary instruction is in a similarly depressed state. The *Colegio* of Montevideo forms a part of the *Universidad mayor de la República*. This institution has from 5 to 7 professors, who teach Latin, mathematics, chemistry, law, French, English, navigation, and drawing. Although the majority of the students are only youth, numerous degrees of LL. D. are granted every year. The university is free, and is well attended. There is also, in connection with the university, a free primary school for poor children. Another *colegio* has been recently established in La Union, a short distance from Montevideo.—See SCHMID, *Encyclopädie*, art. *Südamerika;* WOYSCH, *Mittheilungen über das soziale und kirchliche Leben in Uruguay* (1864); VAILLANT, *La República Oriental del Uruguay* (Montevideo, 1873).

UTAH, one of the territories of the United States, forming a part of the land acquired, in 1848, from Mexico. Its area is 84,476 sq. m.; and its population, in 1870, was 86,786, of whom 118 were colored persons, 445, Chinese, and 179, civilized Indians.

Educational History.—The first step taken by the people of the territory for the promotion of education, was an act passed by the provisional government in 1851, incorporating the University of Deseret, with an annual appropriation of $5,000. This contemplated not only the founding of a university, but the establishment of primary schools in connection with it. In 1851, the chancellor and board of regents of the university were authorized to appoint a superintendent of primary schools, to be under their supervision, and to be paid by them a salary of not more than $1,000. Owing to limited patronage and want of funds, the university had only a nominal existence till 1867, when it was re-organized, and conducted as a commercial college. At the time of the organization of the territory, in 1850, the 16th and 36th sections of land in each township were set apart by Congress for educational purposes; and $5,000 was appropriated for the purchase of a library for the use of the inhabitants. In 1852, the assembly petitioned the general government for an appropriation of $24,000, for the use of schools: but it was not granted. The same year, Congress was petitioned to make for this territory the same donations of land, to settlers, and for educational purposes, as were made to the territory of Oregon in 1850. This also was refused. The rejection of a similar petition for aid in establishing schools, in 1854, led to the approval, by the territorial governor and legislature, of an act, which made it the duty of the chancellor and board of regents of the university to appoint a territorial superintendent of common schools, who should make an annual report to the regents of the number and condition of the schools. It was further provided that county courts should divide their respective counties into school-districts, each of which should elect 3 trustees, who were to collect a tax on all taxable property in the district, at such rate as the voters at the district meeting should determine.

With the funds thus collected, the trustees were to establish and maintain the necessary number of schools, and make an annual report of their official proceedings to the boards of examination of their respective counties. The duties of these boards, which were appointed by the county courts, were to examine teachers, and make an annual report of the condition and statistics of the schools, to the superintendent of common schools. In 1855, the sum of $2,500 was directed by the governor and assembly to be appropriated for the building of an academy, at Salt Lake City; but the low condition of the finances prevented its accomplishment. An act of Congress, granting lands for schools and for university purposes, was passed in 1855; and, to make it effective, the assembly, in 1859, passed an act for the selection of land equal to two townships, for the establishment of a university. In 1864, the collection of certain moneys for the maintenance of the schools was authorized by the assembly; and this was followed, in 1865, by an act "consolidating and amending the school laws." These two acts were superseded, in 1866, when a new school law was passed. Congress was again ineffectually petitioned, in 1867, for a donation, to the territory, of the lands included in the recorded plots of the several cities, towns, and villages of the territory, to aid in laying the foundation of a common-school fund. In 1868, the assembly passed an act giving greater definiteness to the meaning of the school law. The same year, and again in 1870, attempts were made to obtain aid from Congress for educational purposes, but without success. In 1874, the assembly passed an act appropriating annually $15,000, for two years, for school purposes; and this, with the various enactments extending back to 1866, constituted the school law of the territory till February 18., 1876, when the present school law was approved. The first superintendent of common schools in the territory was Elias Smith, who was appointed under the act of October, 1851. His successor was William Willes, appointed in 1856. In 1862, R. L. Campbell was appointed to the office by the chancellor and regents of the university, and held the office till 1866, when he was elected territorial superintendent, which office he held till his death in 1874. His successor was O. H. Riggs, the present incumbent (1877).

School System.—The new school law, enacted in 1876, provides for the election of a *territorial superintendent of district schools* for 2 years, whose duty it is to exercise a general supervision similar to that usually devolving on this officer. He is required to call a convention, to be composed of himself, the county superintendents, and the president of the university, for the purpose of determining what text-books shall be used in the schools, such books to remain unchanged, unless for sufficient cause, for 5 years from the time of their adoption. *County superintendents* are elected at the same time, and for the same term, as the territorial superintendent. They are required to visit the schools at least twice every year, examine and audit accounts, apportion the school money, and make annual reports to the territorial superintendent. *District trustees*, three in number, are elected biennially. Their duties are, to provide school houses, to employ teachers, to visit the schools at least once during each term, and to assess and collect annually a tax of one-fourth of one per cent on all taxable property, which tax may be increased, upon a two-thirds vote of the residents of the district, to a sum not exceeding 3 per cent per annum. There is a *board of examination*, consisting of 3 persons, appointed annually in each county, by the county court, for the purpose of examining teachers and granting certificates. The legislature is required to make an annual appropriation of $25,000, of which $20,000 is for the district schools, and $5,000 for the University of Deseret, provided the said university instruct, in its normal department, free of charge, 40 pupils, apportioned equally among the counties of the territory, such pupils pledging themselves to teach in the district schools of their respective counties, if required by the county superintendents, as many years as they may have received free tuition. The legal school age is from 6 to 16 years. The school year varies according to the district, the county superintendents and trustees in each prescribing its length. The studies pursued are spelling, reading, writing, arithmetic, geography, grammar, book-keeping, history, music, and drawing.

Educational Condition.—The number of school-districts, in 1875, was 236; the number of schools, 296.

The receipts for the support of schools, for the year 1875, were as follows:

From territorial tax............	$15,000.00	
" rate bills and other sources	95,532.70	
" local tax.................	20,267.28	
" district tax...............	49,568.87	
Total...............		$180,368.85

The expenditures were as follows:

For general school purposes..	$130,799.98	
" buildings, repairs, etc....	53,018.87	
Total..............		$183,818.85

The *school statistics* for the same year are:

Number of children of school age (4 to 16 years)	35,696
" " " enrolled in public schools..	19,278
" " " " " private schools.	3,542
Average attendance in public schools.........	13,462
" " " private schools........	2,437
Number of teachers, males and females......	458
Average monthly salary of teachers..........	$17.38

Normal Instruction.—The normal department of the University of Deseret was established August 23., 1875, to continue one year, the fund for its maintenance being derived from appropriations made by the county courts. Applicants for admission must be over 16 years of age, must have a fair knowledge of reading, writing, spelling, grammar, geography, and arithmetic, and some natural tact for imparting instruction. The course of study gives a prominent place throughout to the theory and practice of teaching. Ten counties are, thus far, represented among the students; the average daily attendance being 30. The first *teachers' association* was organized in Salt Lake City in 1860. Since that time, *teachers' institutes* have been organized in several counties, but they have not yet been permanently established by law. *The Territorial Teachers' Association*, of which the territorial superintendent is president, *ex officio*, was organized in 1870 and holds semi-annual sessions in Salt Lake City. A *territorial normal institute* was convened by the superintendent in the University of Deseret, in August, 1875, at which special attention was directed to the best methods of imparting instruction.

Secondary Instruction.—The number of institutions which afford anything beyond elementary instruction is very limited. A number of select and mission schools and academies exist in the territory. Of these, the mission and denominational schools give instruction annually to about 1,250 pupils. The Methodists have six, — one each in Salt Lake City, Ogden, Tooele City, Provo, Nephi, and Beaver. The Episcopalians have one in Salt Lake City, one at Ogden, and one at Logan. The Presbyterians have one each at Salt Lake City, Mt. Pleasant, and Bingham. The Catholics have one at Salt Lake City. A commercial college was opened in the winter of 1875, in Salt Lake City. The total number of Latter Day Saint Sunday-schools, in 1876, was 162, with 2,588 teachers and 20,411 pupils.

Superior Instruction.—The University of Deseret is the only institution in the territory established for the purpose of affording opportunity for higher education. It is non-sectarian, and provides 3 courses,—a preliminary, a scientific, and a classical preparatory. It has a well supplied laboratory, a cabinet of several hundred specimens, valuable mathematical, philosophical, and chemical apparatus, and a library of 3,000 volumes. Youth of both sexes, who are unable to bear the cost of tuition, are admitted free of charge, on application to the president. In 1875, the number of instructors was 4, and the number of students 294,—171 male, and 123 female. The Timpanogos branch of the university was established at Provo City, in 1870. It was suspended in 1875; but was reorganized the same year under the name of the Brigham Young Academy, the building and grounds, valued at $15,000, having been donated to the county by Brigham Young. It was opened in January, 1876, with 70 students, since increased to 125. This is the only school in the territory in which instruction in theology is afforded.

VANDERBILT UNIVERSITY, at Nashville, Tenn., is under the control of the Methodist Episcopal Church, South. It was chartered in 1872 as The Central University of the Methodist Episcopal Church, South; the name was changed, in 1873, in honor of Cornelius Vanderbilt, of New York, who gave the institution $500,000, to which he afterward added $200,000. The university was opened in October, 1875. The grounds and buildings cost $400,000. The site is at the west end of the city, half a mile from the corporation line. The library contains 6,000 volumes. There are cabinets of fossils, minerals, and rocks, an astronomical observatory, and valuable philosophical and chemical apparatus. The university is organized with four distinct departments, as follows: (1) the department of philosophy, science, and literature; (2) the Biblical department; (3) the law department; (4) the medical department. The first department comprises 10 schools; namely, Latin, Greek, modern languages and English, moral philosophy, philosophy and criticism, mathematics, physics and astronomy, chemistry, natural history and geology, and engineering. The usual degrees are conferred. The annual tuition fees are as follows: Academic courses, $70; Biblical department, free: law, $120; medical, $65. There are several scholarships entitling the holders to free tuition, and fellowships are to be established. In 1875—6, there were 26 instructors (academic department, 10; Biblical, 3; law, 3; medical, 10), and 307 students, including 52 in theology, 25 in law, and 115 in medicine. Landon C. Garland, LL. D., has been the chancellor of the university since its organization.

VASSAR COLLEGE (for women), at Poughkeepsie, N. Y., was chartered in 1861, and opened in 1865. It was named after Matthew Vassar, of Poughkeepsie, its founder, whose gifts to it amount to about $778,000. It is not denominational. The name was Vassar Female College till 1867. The buildings are situated on a farm of about 200 acres, two miles east of the city. The unproductive property is valued (July 1., 1876) at $681,286 (real estate, $515,311; personal property, $165, 975); the amount of productive funds (for library, cabinets, lectures, aid of students, and repairs), at 7 per cent, is $281,000. The salaries and other current expenses are paid from students' fees. The charge for board is $300 per annum; for tuition, $100. Liberal aid is afforded, either in gifts or loans, to students of high character and superior scholarship in the regular course. The college has valuable apparatus and cabinets, an art gallery, an astronomical observatory, and a library of over 10,000 volumes. The regular course is for four years. All applicants for admission must be at least 16 years of age. The curriculum embraces Latin, Greek, French, German, mathematics, botany, zoölogy, mineralogy, geology, astronomy, physics, chemistry, physiology, English literature, rhetoric, history, mental philosophy, moral philosophy, etc. The arts taught in the college are vocal and instrumental music, drawing, painting, and modeling in clay or wax. Students sufficiently mature and advanced may take eclectic courses. Those who complete the regular course receive the first or baccalaureate degree in arts. A candidate for the second degree in arts must pass an examination in studies which have been approved by the faculty as equivalent to a post-graduate course of two full years. There is also a preparatory department. In 1875—6, there were 29 instructors (7 males) and 370 students, of whom 205 were of the collegiate grade (2 resident graduates, 183 pursuing the regular course, and 20, special courses). The presidents have been Milo P. Jewett, LL. D., 1861—4; and John H. Raymond, LL. D., since 1864.

VENEZUELA, a republic of South America, having an area of 368,000 square miles, and a population of about 1,500,000. The religion of the people is the Roman Catholic, but others are tolerated.

The education of the lower classes is very much neglected. Primary instruction is left to the care of the provincial deputations; but, owing to their indifference, the law requiring every voter to be able to read and write, is inoperative. The number of primary schools was reported, in 1875, as 541, of which only 141 were government schools. The attendance at the former was 7,064; at the latter, 11,017. The new constitution of 1876 provides that all moneys formerly appropriated for ecclesiastical purposes, shall henceforth be devoted to education. It also provides that no minister or priest, of any denomination whatever, shall be employed as a teacher in the public schools. The education of girls was for a long time entirely neglected by the government. Recently, however, the government has paid considerable attention to this subject. A higher female school has been established; and, in 1870, a *junta inspectora* was appointed in Caracas, preparatory to the establishment of a national female college.

Secondary as well as *superior instruction* is in a much more satisfactory condition, owing to the labors of the Jesuits, who, upon their expulsion, left a prosperous college in Maracaybo, in which the Spanish language, the ancient languages, poetry, rhetoric, and philosophy were taught. The university of Caracas was founded, in 1696, as a *colegio*, and raised to the rank of a university in 1722. For a long time, the *colegio* of Merida, which served as a university during the 18th century, competed successfully with the university of Caracas. At present, both of these institutions, as well as the medical school of Caracas, are under the control of the state. The university of Caracas had, in 1874, 19 professors and 165 students; and that of Merida, 12 professors and about 150 students. The revenue of the endowment fund of the university of Caracas amounts to about $30,000.—Secondary instruction is imparted in 13 *colegios nacionales*, the total endowment funds of which amount to about $260,000. Law is taught at Barcelona; and, at Maracaybo, law, anatomy, physiology, and navigation. Besides the government schools, there are also the following private institutions: A *colegio* for poor students, in Caracas; the *Colegio de la Independencia*, in the same city; the *Colegio de la Fraternidad*, in La Guayra; an elementary school for art and science, and a school for drawing and painting, in Caracas.—See SCHMID, *Encyclopädie*, art. *Südamerica.*

VENTILATION. Probably no subject connected with the improvement of schools has, of late years, been more fully and earnestly discussed than that of ventilation. Unfortunately, however, the results reached have by no means corresponded in importance to the length or vigor of the discussion. Notwithstanding the minute and elaborate experiments made by modern science on this subject, it is hardly too much to say that the only point of agreement is, that ample ventilation is of paramount importance in the economy of the school room. Any recommendation of particular methods of effecting this, or any appeal to statistics or experimental details, becomes at once the occasion for fresh dispute. The subject will be considered here under the following heads: (I) The conditions favorable to proper ventilation; (II) The methods employed to utilize those conditions; (III) Some of the ways in which ventilation is prevented.

I. Under this head, will be considered (1) the sources from which a proper supply of fresh air for the school room is to be obtained, and the quality of the air so obtained; and (2) the determination of the quantity needed by each pupil for purposes of respiration. That the great reservoir of the outer air which surrounds the school room is the only proper source of supply for the lungs of its inmates, requires no demonstration; the only question being that which concerns its purity. The direct and intimate connection which has been ascertained to exist between the air which we breathe and the blood, has been found to extend to the brain, and healthful intellectual activity and pure air are now almost convertible terms. Whatever causes, therefore, tend to vitiate the air surrounding the school building should be carefully eliminated. (Concerning the proper site of the school building, as regarded from a sanitary stand point, see HYGIENE, SCHOOL.) Another cause which, in certain sites, and, at certain seasons of the year, in any site, may affect the quality of the air introduced into the school room, is the height above the ground from which it is drawn. The danger to be apprehended from malarial fever, one of the most insidious foes of the human race detected by modern sanitary science, has led recent writers on the subject of ventilation to recommend that the inlet for fresh air be placed as high as possible, so that the lower stratum of air—that near the ground or from the cellar—be not admitted.—Much of the difficulty which attaches to the subject of ventilation, arises from the fact that medical men who have given special attention to the matter, are by no means agreed as to the amount of pure air needed by each person for purposes of respiration; their estimates of the number of cubic feet of space required by each pupil in the school room where the ventilation is ample, varying from 300 to 1,200. From a comparative examination of various estimates, it appears that the average amount of fresh air required by each individual hourly is at least 1,000 cubic feet. In school rooms provided with adequate means of ventilation, this requires, according to most sanitarians, at least 300 cubic feet of space for each pupil. This, though hardly above the minimum, exceeds, probably, in a majority of cases, the most liberal allowance made by those school officers who pride themselves on their generosity in this respect. Usually, the allowance is less than 110 cubic feet. The quantity of air, also, admitted by the ventilating apparatus, bears a constant relation to the size of the room. Says Dr. A. N. Bell on this point, "The smaller the space, the greater the necessity for, and the larger the opening required for, the admission of fresh air. * * * It has been calculated that, with ordinary exposure, an open space equal to 5 inches in the square, will admit the passage of 2,000 cubic feet hourly; this, of course, implies that there should be an equal amount of open space for the escape of the air displaced.".

II. In considering the different methods of ventilation, attention should, at the same time, be given to the method of warming the schoolroom; since the two subjects are almost inseparably connected. The entrance of warm air into a room for breathing purposes, is inevitably attended by, and naturally suggests, a corresponding exit of vitiated air, and points unmistakably to the resulting current as the most efficient means for ventilation. If the question were merely that of determining the easiest way of replacing a certain amount of impure, by a corresponding amount of pure, air, the problem would be one of easy solution; since the difference of temperature which generally exists between the outer air and that of the school room furnishes the condition most favorable to ventilation, the only agent needed being a connection between the two, which is readily supplied by an open door or window. In summer, this method, which may be called the natural one, is in almost universal use, and is accompanied generally with satisfactory results. In winter, however, the violent displacement of one atmosphere by the other, which results from the greater difference in their temperature, and which immediately begins when a connection is made between them, makes itself felt in the shape of dangerous drafts. The problem for the inventor, therefore, is how to produce this change of air without any perceptible draft; and to this additional condition, is to be attributed the practical failure of so many ingenious devices which, in theory, are admirable. One of the simplest and most effective methods of ventilation is used in connection with the method of warming described under the head of school hygiene. (See HYGIENE, SCHOOL.) It consists of a chimney with two flues, one for the fire, the other for ventilation. The latter is separated from the former by a partition of metal which becomes heated by the air from the fire, and, by warming the column of air in the ventilating flue, causes it to ascend, tending thus to produce a vacuum, which the vitiated air of the room flows in to fill. The ventilating flue has two registers, one near the floor, the other near the ceiling, both of which can be controlled at pleasure. A more economical method consists in making a ventilating flue only, but making it sufficiently large to permit the passage of the stove pipe along its middle line, while leaving considerable air space around the latter. By extending the stove pipe to the top of the house, the heat of the stove is used, as in the previous case. If the room is warmed by an open fire, the increase in the amount of fuel used should be charged to the account of ventilation, and the additional expense incurred should not be regarded as a violation of the laws of economy, but rather as an observance of the provisions of that true economy which does not look for immediate and petty results, but is fundamental in its action, and conducive to the permanent benefit of teacher and pupil. For combined ventilating and warming purposes, in small school rooms, the open grate fire has many advantages; but, of course, it should be carefully screened. For more elaborate methods of ventilation, with modifications to suit circumstances, see the works quoted at the end of this article, in which the subject is exhaustively treated.

III. The great importance of effective ventilation, to which it is exceedingly probable that the public mind is not yet sufficiently aroused, and the practical difficulty which attends it when any but the simplest means and appliances are used, render it necessary to make some mention of the ways in which proper ventilation is thwarted, even when it is apparently provided for. These are principally two: (1) a ventilating apparatus, originally inadequate in size, or, if adequate, the ineffective working of it, through frequent derangement; (2) the overcrowding of the school room after the originally liberal estimates for air supply, based on a smaller number of pupils, have been made. Insufficient apparatus, from either the first or second cause mentioned above, is one of the commonest difficulties with which intelligent school officers have to contend; so easy is it for any one, in the absence of decidedly bad results, to lose sight of the essential conditions of a healthy school room, and so clamorous is the tax payer usually for smaller demands upon his purse. In the compromises which generally follow these contests between the pocket and the lungs, it is too often found that the greater concessions have been made by the latter. In the second case—that of overcrowding—the same deleterious effects follow, insufficient air space being the evil in both. Even intelligent teachers are, in this way, frequently deceived. The number of pupils is increased so gradually that the evil is for a long time unsuspected, and not till its effects have declared themselves in some unmistakable, and perhaps fatal, manner, is attention called to the probable cause.—As has been said, the air provided for breathing purposes should be drawn from out-of-doors, at a height above the ground sufficient to preclude all danger from exhalations, and should be introduced into the room at the opposite end from that at which the impure air passes out, and at the top of the room, but in such a way as to prevent drafts. This is best done by providing a number of small apertures, the air from which passes through the vitiated air of the room in numerous small currents which are imperceptible, and which cause the fresh air to be evenly diffused. If warmed by a cellar furnace, it should not be introduced into the room by floor registers, since these are always, more or less, traps for dust, which thus, in some shape, is liable to be taken into the lungs. The ventilating apparatus should not only be sufficiently large at the outset, but should be thoroughly tested before it is introduced, so as to ascertain whether its working sustains the theory of its construction, and should be carefully examined, from time to time, with the view to secure its constant efficiency.—See G. WILSON, *A Handbook of Hygiene and Sanitary Science* (London, 1873); PARKER, *A Manual of Practical Hygiene* (4th ed., London, 1873); MORIN, *On Warming and Ventilation of Occupied Buildings*, in reports of Smithsonian Institution (1873—4); *Proceedings of the Department of Superintendence of the National Educational Association, at Washington, January 27. and 28., 1875*; BUISSON, *Rapport sur l'instruction primaire à l'exposition universelle de Vienne* (Paris, 1875); *The School Board Chronicle* (London, March and May, 1875); ROBSON, *School Architecture* (London, 1874).

VERMONT, one of the New England states of the American Union, into which it was admitted in 1791. Its area is 10,212 sq. m.; and its population, in 1870, was 330,551.

Educational History.—In 1761, after the expulsion of the French from the valley of Lake Champlain and from Canada had given a feeling of security to the settlers, Vermont began to be rapidly filled with immigrants. In 1777, it was declared to be an independent state; a constitution was adopted, in 1778, and a government organized. Some of the towns had already established schools. Previous to 1763, the people of Bennington had raised a school tax; and, October 5., in that year, the town granted money to each of the three school-districts to aid in building school-houses. The first constitution of Vermont declared that a school or schools should be established in each town, by the legislature, for the instruction of youth. The first law of the state relating to schools was enacted October 22., 1782, by which towns were empowered to form school-districts, and to elect trustees. The districts were authorized to choose officers, to hold property, to establish schools, build school-houses, etc. From this beginning, the school system has been gradually developed, without radical change at any time. By the first school law, the action of the towns in regard to the school was, in great measure, optional; but, as the government became settled in its methods, and the number of the towns was increased, the legislature adopted a different tone, and, in 1797, commanded the towns to support schools, and later, in 1821, provided that the grand jury of each county should inquire annually, whether the several towns in the county had raised and properly expended the state school tax; and every delinquent town was made liable to fine,—a provision which now applies to all the public money. The early legislation on the subject of schools gave to the town power to divide its territory into school-districts and to alter the same; but otherwise the district was independent of the town, and it has since come under the supervision and control of the town only by a slow process. The first step in this direction was a requirement that the town, in the annual division of the public money, should withhold the share otherwise due, from a district that had not supported a school during the previous year. Next, came the provision, introduced in 1827, that persons employed as teachers must be licensed by town officers. The provisions requiring the selectmen of the town, in certain cases, to set up a school, and even to build a school-house, in and for a district, and to assess and cause to be collected a tax on the inhabitants contained in the grand list of the district, in order to pay for the same, left but a single step further in that direction. This was taken in the law of 1870, which permitted the towns to abolish the districts, and to intrust the management of the schools to a committee chosen by the town. Under the first school law, the districts had power to raise money by a tax on the grand list or on the scholar; consequently, the question, shall the school, after expending the public money, be supported wholly by a tax based on the grand list, and thus be wholly free, annually arose for decision in every school-district in the state. This question, probably, has been more widely and fully discussed, through a long period, than any other before the people of Vermont; and the history of the legislation on the subject is proportionally important. The law of 1782 gave to the prudential committee of the district power to assess a tax, according to the grand list of the district, sufficient to pay one-half of all the school expenses, and to the district the power to vote the other half on the basis of the grand list, or on the scholar. The revised school law of 1797 provided that the district might vote the entire sum on either basis. In 1827, however, the power of the district to raise money on the scholar to build and repair school-houses, and, in 1850, the power to raise money in a similar way to pay the wages of teachers, were revoked; and, in 1864, it was enacted that "All expenses incurred by school districts for the support of schools shall be defrayed by a tax upon the grand list of the district." The determination of the people, after eighty-two years of discussion, was, that the public schools should be wholly free. In the law of 1782, no enumeration of studies to be pursued in the common schools was made. In 1797, English reading, writing, and arithmetic were specified as subjects to be taught; in 1827, orthography, English grammar, geography, history of the United States, and good behavior were added. Until 1841, no legal provision existed for the maintenance of more, or other, than one common school in each school-district. Instruction of the grade between that furnished by the common school and that furnished by the college, was provided for only in private schools, which existed at that time in all parts of the state. Contiguous districts, retaining their separate organization, privileges, and duties in reference to supporting each a school for the smaller children, were allowed to unite, and constitute one school-district, for the purpose of maintaining a school for the larger children. Three years later, districts having more children than could be well provided for in one school, were authorized to establish any required number and grade of schools. Later still, towns were empowered to establish districts for the support of high schools, and towns adopting the town system were permitted to establish schools of any needed grade. The growth of high and graded schools, during the last thirty-four years, is the most important feature in the recent educational history of Vermont. Within that period, public schools, free to the inhabitants of the town or district supporting them, in which instruction in the higher branches of learning is regularly provided for and given, have been established in at least twenty-seven towns; while, in more than a score of others, schools of two or three departments are regularly supported. While, before that time, no student could be prepared for college in a public school, to-day as many students are preparing for college in the public schools as in the private schools.—The supervision of schools by the town is involved in the requirement that public money be distributed to such districts only as support schools; and supervision by the state is very clearly implied in the requirement that the grand jury in each county shall ascertain whether the several towns of the county have raised and properly expended the state school tax. In 1827, it was enacted, " that each town in this state shall choose a superintending committee who shall have the general charge of all the public schools in said town." The law further made it the duty of said committee to require full and satisfactory evidence of the good moral character of all instructors employed in said town, and to satisfy themselves, by personal examination, of their qualifications for teaching, and their capacity for the government of schools; and declared that no instructor should be entitled to any compensation for teaching in the public schools, unless he had obtained from the superintending committee, or a majority of them, a certificate of qualification. The superintending committee were required to visit the schools and to make careful examination thereof, to determine the class books to be used in the several schools, and to make returns to the secretary of state. The law requiring the election of a superintending committee was repealed in 1833, but was revived in 1845 by an act which provided for the election of town superintendents, with powers and duties very similar to those already described. —The school law of 1827 required the secretary of state to collect school statistics from the towns; and the same law provided that there should be annually chosen by the legislature a board of commissioners, consisting of five persons, to be denominated the Board of Commissioners for Common Schools. The board of commissioners were to meet at least once a year. They were to prepare a list of text-books, and to advise the superintending committees to select from the same for the use of the schools; to examine the effect of the school laws of the state, and if, in their opinion, alterations in said laws were necessary, to specify the same, in their annual report to the legislature. The board of commissioners made a report in 1828; and, in 1833, all laws concerning the supervision of schools were repealed.—With the restoration of town supervision, in 1845, came the restoration of state supervision by a state superintendent of common schools, annually elected by the general assembly, whose duties were essentially the same as those of the secretary of state and board of commissioners under the law of 1827, except that he was not required to recommend text-books. Six annual elections of state superindendent, and six annual reports by that officer, followed the enactment of this law; but, in 1851, the general assembly refused to choose a superintendent, and thus, through legislative neglect, state supervision of the schools ceased. It was revived, however, under a new law, in 1856, which provided for a board of education. To this board were intrusted substantially the same powers as those granted to the earlier board of commissioners, with the added power of appointing a secretary. This officer was to keep a record of the official proceedings of the board, to hold teachers' institutes, to visit all parts of the state and deliver lectures on subjects pertaining to education, to confer with town superintendents and visit schools with them, to collect statistics, and to report annually. Afterward, the supervision of the normal schools, provided for in 1866, was committed to the board of education and their secretary.—The control and supervision of the schools by a board of education continued till 1874, when it was replaced by the present system.—The *state superintendents* have been as follows: (under the title of Superintendent of Common Schools) Horace Eaton, 1845—50; Charles G. Burnham, 1850—51; (as Secretary of the Board of Education) J. S. Adams, 1856—67; A. E. Rankin, 1867—70; John H. French, 1870—74; (as Superintendent of Education) Edward Conant, elected in 1874.

School System.—The supervision and control of the public schools of the state are committed to a *superintendent of education*, who is elected biennially by the legislature. His duties are those discharged by the secretary of the board of education previous to 1874. *Town superintend-*

ents are chosen annually by the people. They are required to visit the schools at least once a year, to hold two examinations of teachers each year, to grant certificates, and to report to the state superintendent once a year. Each district has a moderator, a clerk, a collector of taxes, a treasurer, one or three auditors, and a prudential committee, consisting of one or three voters residing in the district. These are all elected annually. The public money belongs to the towns, and is by them distributed to the districts, where these exist. It is derived from lands reserved for the use of schools in the original grants of the townships, from gifts to the towns, from the income derived from the United States deposit fund, which is apportioned to the several towns according to their population, and from taxation. Each town using the district system, is required to appropriate annually as public money for the use of schools, such a sum as would be raised by a tax of nine cents on each dollar of the grand list of the town, increased by one half the income from the United States deposit fund. Towns using the town system, are required to appropriate as public money all income for school purposes, derived from any of the sources mentioned above, except taxation; and, in these towns, the selectmen may appropriate for the support of schools sums not exceeding the amount that would be raised by a tax of fifty cents on a dollar of the grand list of the town. All other moneys raised for school purposes must be voted by the towns or by the districts. Vermont has no state school fund. Each town is required to support a school or schools, the organization of which according to the town or district system, is optional. The school-district being the creation of the town, is subject, in every respect, to town control. The public schools are free to the inhabitants of the towns or districts supporting them, and ample facilities are furnished for the establishment and support of graded and high schools. The studies pursued by law in the common schools, are reading, spelling, writing, arithmetic, English grammar, geography, the history and constitution of the United States and of Vermont, and good behavior. The legal school age is from 5 to 20 years; the school year, 5 months or more. For children between the ages of 8 and 14 years, and for a period of 3 months, education is compulsory; and no child of this age, who has resided a year in the state can, without violation of the law, be employed in any mill or factory, unless he has attended a public school for 3 months during the preceding year.

Educational Condition.—The number of organized school-districts, in 1874, was 2,224; the number of fractional districts, 530; the number of common schools, 2,782. The amount of money received during the school year ending March 31., 1876, was as follows:

From local tax	$425,958.69	
" permanent fund	14,193.33	
" other sources	40,006.06	
Total		$480,158.07

The expenditures were as follows:

For salaries of teachers	$437,471.27	
" sites, buildings, and furniture	67,010.83	
" fuel and incidentals	60,562.47	
Total		$565,044.57

The other chief items of *school statistics* are:

Number of children of school age		92,577
" " " enrolled in common schools		71,325
Average daily attendance		39,474
Number of teachers, males	665	
females	3,448	
Total		4,113

Normal Instruction.—There are three normal schools in the state—at Castleton, Randolph, and Johnson. Their financial management, and the employing of teachers for them, is committed to local boards of trustees. The arrangement of courses of study is intrusted to the respective boards of trustees and the superintendent of education. The graduation of students is controlled by a board of examiners, and the teachers employed must be nominated and approved by the state superintendent. The graduates from these schools are licensed to teach in the state for a term of years. An annual appropriation of $1,500 is made by the state to each school.—The Chittenden County Teachers' Association, organized in 1847, and the Vermont State Teachers' Association, organized in 1848, hold annual meetings.

Secondary and Denominational Instruction.—In a few of the large towns, the Roman Catholics have established schools for the separate education of their children, and movements tending to the same end, are said to be in progress in other towns. Private schools, incorporated as academies, grammar schools, seminaries, etc., exist in all parts of the state. The number of incorporated academies, county grammar schools, and academic departments of graded schools is about 100. The number of pupils pursuing higher studies was reported, in 1875, as 7,334.

Superior Instruction.—Three institutions of this grade exist in the state as follows:

NAME	Location	When founded	Denomination
Middlebury College	Middlebury	1800	Cong.
Norwich University	Northfield	1834	Pr. Epis.
University of Vermont	Burlington	1791	Non-sect.

The Vermont Methodist Seminary and Female College, at Montpelier, is the only institution in the state exclusively devoted to the superior instruction of women. The value of its property is estimated at $80,000. In 1875, it had 8 instructors and 166 students. The University of Vermont also furnishes instruction to women on the same conditions as to men.

Professional and Scientific Instruction.—The agricultural and scientific department of the University of Vermont constitutes the State Agricultural College, established in 1865. It has three regular courses,—one in theoretical and applied chemistry, one in civil engineering, and one in metallurgy and mining engineering. There is, also, a literary and scientific course, and a laboratory course, the latter for students in the medical department, and for teachers in academies who are required to give instruction in chemistry. In 1875, the number of instructors was 7, and the number of students, 20. Instruction in science is also given in the scientific department of Norwich University, and instruction in medicine, in the department for that purpose in the University of Vermont.

Special Instruction.—The Home for Destitute Children, at Burlington, was founded in 1865, its origin being a small private asylum, opened at that time for seven indigent children. In 1867, a permanent fund of nearly $50,000, was raised by subscription, and, in 1875, a new building was dedicated and opened.

VERMONT, University of, at Burlington, Vt., was chartered in 1791, and opened in 1800. In 1865, the congressional land grant to the state, for the support of an agricultural and mechanical college, was transferred to it, and it was incorporated as the University of Vermont and State Agricultural College. A medical department was organized in 1809. It is supported partly by endowments and partly by tuition fees ($70 per annum in the medical and $45 in the other departments). The university has a library of 17,000 volumes and a valuable cabinet of natural history. In the academic department, there is, besides the classical course, a literary-scientific course, embracing Latin, the modern languages, and various branches of science, physical, political, mental, and moral. In the agricultural and scientific department, there are courses in agriculture, in chemistry, in civil engineering, and in metallurgy and mining engineering. In each department, special courses may be pursued by those not candidates for a degree. Both sexes are admitted to the academic and scientific departments. In 1875—6, there were 21 instructors (12 in the medical department) and 168 students (76 medical). The presidents of the university have been as follows: the Rev. Daniel Clarke Sanders, D. D., 1800—14; the Rev. Samuel Austin, D. D., 1815—21; the Rev. Daniel Haskel, A. M., 1821—4; the Rev. Willard Preston, D. D., 1825—6; the Rev. James Marsh, D.D., 1826—33; the Rev. John Wheeler, D. D., 1833—49; the Rev. Worthington Smith, D. D., 1849—55; the Rev. Calvin Pease, D. D., 1855—61; the Rev. Joseph Torrey, D. D., 1862—6; James Burrill Angell, LL.D., 1866—71; and Matthew Henry Buckham, A. M., since 1871.

VILLANOVA, Augustinian College of St. Thomas of, commonly called *Villanova College*, at Villanova, Delaware Co., Pa., was founded in 1842, and chartered in 1848. It is a Roman Catholic institution, conducted by Hermits of the Order of St. Augustine. It is supported by the fees of students, the regular charge for tuition, board, etc. being $150 per session of five months. The libraries contain 8,000 volumes. In the classical department, the studies necessary for graduation embrace a period of seven years, three of which are devoted to the preparatory classes, and four, to the collegiate. The scientific course requires six years. There is a commercial course of two years. The theological department has a four years' course. In 1875—6, there were 17 instructors (2 theological) and 79 students (13 theological). The presidents have been as follows: (1) Patricius Eugene Moriarty, O.S.A.; (2) Jno. P. O'Dwyer, O.S.A.; (3) Wm. Harnett, O.S.A.; (4) Ambrose A. Mullen, O. S. A.; (5) Patrick A. Stanton, O. S. A.; (6) Thomas Galberry, O.S.A.; (7) the Very Rev. Thomas C. Middleton, D. D., O.S.A., the present incumbent (1877).

VIRGINIA, the oldest of the thirteen original states of the American Union, having an area of about 45,000 sq. m., and a population, according to the federal census of 1870, of 1,225,163, of whom 712,089 were whites, and 512,841 colored persons.

Educational History.—The history of education in Virginia may be divided into periods marked by the great political epochs of the state: (I) From 1607 to 1776; (II) From 1776 to 1865; (III) From 1865 to the present time.

I. *From* 1607 *to* 1776.—Among the first cares of the Virginia colony was the provision for education. As early as 1619, some provision was made for a college, and for a free preparatory school; but the massacre of 1622 destroyed these nascent institutions, and left education without any organized form until the creation of the College of William and Mary, in 1693. During the first three quarters of the 18th century, this college served well its objects, whilst the lower branches were taught by clergymen, parents, and chance teachers. The germs of Washington College and Hampden Sidney College were planted near the close of this period. Some abortive efforts were made to educate Indians and negroes.

II. *From* 1776 *to* 1865.—The education of the people was an object of solicitude with the Virginia legislature, even during the Revolutionary war, as was evinced by the report of an able committee, with Mr. Jefferson at its head, in favor of a scheme of public instruction. The plan reported was finally adopted in 1796, with, however, an important modification, which, by changing it from a mandatory state system to an optional county system, occasioned its failure. The next public movement was the creation of a literary fund in 1810, the interest of which was at first devoted exclusively to the education of the poor. This fund grew by the addition of fines, forfeitures, and escheats, until, by the end of the period, it amounted to two millions of dollars, and yielded an annual revenue of about $100,000, of which $80,000 was apportioned among the counties for paying the tuition of the poor children, chiefly in private schools, and the remainder was ultimately given to the State University and the Military Institute. —School commissioners were appointed in every county, to determine what children were entitled to the benefit of the public money, and to pay their tuition fees at a certain fixed rate, which varied at different times from 4 to 8 cents a day. Multitudes of children — sometimes more than 30,000 in one year — were thus sent to school, who otherwise would have had no opportunity of receiving the simplest elements of education. But badly qualified teachers were often employed, the poor experienced a feeling of humiliation, ignorance was but slightly diminished, and the working of the system was so unsatisfactory that, every few years, efforts were made to provide something better. In 1829, an act was passed by the legislature, looking to a combination of private and public means for the maintenance of schools free to all. To this end, the school commissioners in any county were authorized to district the county, and to offer to contribute two-fifths toward the cost of the building of a school-house in each district, and one hundred dollars towards maintaining a teacher, if the people would do the rest by voluntary contribution. In a few counties, the experiment was tried vigorously, but not with much success anywhere. — Soon after the census of 1840 had revealed, for the first time, the large proportion of illiteracy existing among the whites, a strong and well-nigh successful movement was made to establish a state system of public free schools; but, in passing through the legislature, the scheme was marred, as Jefferson's had been before it, by giving it the shape of simply authorizing any county to adopt a free school system for itself. This act was passed in 1846, and nine counties by popular vote adopted the system; but, owing to defects, it was not satisfactory anywhere. The "Pauper System" still prevailed until the revenues of the Literary Fund were applied to the military defense of the state. — Unsatisfactory as was the condition of primary education during this period, the higher branches, on the other hand, were studied by an unusually large proportion of the Virginian youth. Many young men sought a liberal education at Harvard and Yale, and especially at Princeton College, while some crossed the ocean. William and Mary, Hampden Sidney, and Washington colleges supplied the means of advanced education in the state previous to the opening of the State University, in 1825. Subsequently were added Randolph Macon, Emory and Henry, Richmond, and Roanoke colleges — of which a more particular account is given elsewhere. A constantly increasing number of secondary schools existed in the state, and some of them were conducted by highly educated men. — In 1838, an institution was founded by the state for the instruction and maintenance of the deaf and dumb and the blind, and was endowed with an annuity of $35,000. The only special provision for female education consisted of private and denominational academies.

III. *From* 1865 *to* 1875. — At the close of the civil war, in 1865, schools of all grades were prostrate within the territory remaining to Virginia; but immediate efforts were made to revive them and the census showed that the general school attendance in 1870 was not greatly below that of 1860. By this time, however, about one-sixth of the pupils were colored, owing to the establishment of colored schools by northern societies and by the Freedmen's Bureau. Increased poverty and the failure of revenue from the Literary Fund occasioned the falling off of attendance among the whites. — In 1869, the new state constitution prepared by the convention of 1867—8, assembled under the Congressional Reconstruction Acts, became the organic law of the state. This constitution provided for a system of public free schools to be supported by taxation, state and local, and by the interest derived from the Literary Fund. The system was to be administered impartially as between the races, and to be in full operation by 1876. The first legislature which met after the adoption of the constitution promptly took up the subject, chose a state superintendent of public instruction, and, on the 11th of July, 1870, passed a complete school law, embodying a thorough and effective public free-school system, which was immediately put into successful operation, and has grown steadily in strength and usefulness. — Before the establishment of the public-school system in Virginia, we ascertain, from the census of 1860 and other sources, that there were about 67,000 children attending school in the present limits of Virginia, of whom 31,500 were pauper children, whose instruction was paid for out of a portion of the interest of the Literary Fund. The entire amount expended on these pauper children was $80,000, so that the instruction received was very rudimentary. There has been no great change in the aggregate of population of the counties now constituting Virginia since 1850. It may, therefore, be instructive to observe the school attendance in all schools: public and private, at different periods:

In 1850	51,808	(U. S. Census)
" 1860	67,024	"
" 1870	58,974	"
" 1875	207,771	(Va. School Returns)

Of these, the colored pupils were about 10,000 in 1870, and 58,760 in 1875. —

Almost immediately on the establishment of the public-school system, in 1870, the number of pupils attending the public schools alone was more than twice as great as the total number which had, at any time previous, been found in schools of all sorts; and, besides this, there were over 20,000 children attending the private schools. While, in 1870, according to the U. S. census, taken for 1869—70, the number of pupils enrolled in schools of all sorts was 58,974; in 1870—71, the total number was 157,841, or an increase of nearly 100,000 in one year. The enrollment of whites was more than doubled, while the colored pupils increased fourfold. Excepting one year, there was a gain in the public schools every year, for the first five years, in the attendance of both white and colored pupils. The number of whites increased from 89,734, in 1871, to 129,545, in 1875; that of the colored pupils, from 38,554, in 1871, to 54,941, in 1875. — About $25,000, more or less has been annually distributed in the state from the Peabody fund. The object and conditions of distribution are the same in Virginia as in the other Southern States. The money has been exceedingly useful, far more than would have been the same amount forming part of the ordinary local funds. There has been but one *state superintendent* in Virginia, — William H. Ruffner, LL.D., elected in 1870, and still in office (1877).

School System. — The system is administered by a state board of education, a superintendent of public instruction, county and city superintendents of schools, and district trustees. The *board of education* consists of the governor, the superintendent of public instruction, and the attorney-general. It controls the state school fund, appoints and removes county and city superintendents, and also district trustees, the latter absolutely, and the former subject to confirmation by the senate. The city school trustees are appointed by the city councils, but are removable by the state board. There are no popular votes in reference to either school officers or taxation. The state board is the final tribunal for the decision of all appeals from the action of the state superintendent. It is also charged with regulating uniformity of textbooks, and all other matters of detail not expressly provided for by the law. The superintendent of public instruction is elected by the legislature for four years, and receives a salary of $2,000, and $500 additional for traveling expenses. He is provided with an office in the state capitol, and has two clerks. He is the chief executive officer of the school system. His duties are to see to the enforcement of the school laws and regulations, and to promote an educational spirit among the people, to interpret the school laws, to decide appeals from the action of the county superintendents, to instruct and supervise the school officers, to provide blanks, to apportion state school funds, to make tours of inspection, to require reports of local officers, and to make an annual report, which goes to the legislature through the board of education, and is printed at state expense. *County* and *city superintendents* are appointed for four years; their pay is graduated according to population and number of schools, but outside of the cities no superintendent can receive less than $200 a year, which is drawn entirely from state funds. They are charged with the usual duties of such officers in the most approved school systems. There are three *district school trustees* in each magisterial district (which corresponds to the township in other states). Besides the district boards, there is a county school board, composed of all the district trustees, with the county superintendent as president. The county board annually examines the records and vouchers of the district boards, and furnishes to the supervisors of the county estimates for the amounts wanted for school purposes. Teachers are examined and licensed by the county superintendent, and appointed by the district boards under written contracts. The six primary branches, reading, spelling, writing, arithmetic, grammar, and geography, are required to be taught in all the public schools, and other branches are allowed in the rural districts under restrictions. The law imposes no restriction on studies or the general management in the larger cities, the subject being regulated by the city school boards. The schools are free to all children between 5 and 21 years of age, residing in the district, without charge for tuition, except that a monthly charge of $2.50 may be made for the higher branches, which are taught, under prescribed regulations, in some of the schools. Equal educational privileges are secured by law to white and colored children, but they must be taught in separate schools. The minimum school term is 5 months, and 15 is the minimum number of pupils prescribed to constitute a school. Schoolhouses are provided and furnished at the expense of the district. *School funds* are derived from the state, the county, and the district. The state funds embrace the interest on the Literary Fund, a capitation tax of one dollar on every male citizen, and a tax of one mill on every dollar's worth of property in the state. Out of the state funds are paid the expenses of the central office, and a portion of the salaries of the county and city superintendents; the rest is apportioned among the counties and cities to be used exclusively for the payment of teachers, except that the county superintendent's salary may be supplemented from this source in an amount not exceeding that received from the state. District funds (where they do not exceed a property levy of 5 cents on the $100) are used exclusively for schoolhouses, furniture, incidental expenses, and for buying books for indigent children. Local funds are raised by the supervisors on the presentation of estimates from the school boards, but the estimates may be cut down by the supervisors. Cities having more than 10,000 inhabitants are allowed to manage their own school affairs in most respects.

Educational Condition. — The whole number of school-districts in the state is 458; of public schools, 4,185. The graded system has been adopted in all the cities and towns, and in many thickly-settled country places; so that, in 1875, there were 155 of such organizations, each having from 2 to 13 teachers. Some of the higher branches are usually taught in the upper grades. The schools are, with some exceptions, for both sexes.

The most important *school statistics* (for 1875) are the following:

Whole number of pupils enrolled	184,4
" " " " in average attendance	103,927
Percentage of school population enrolled	38.2
No. of teachers in public schools	4,262
Average number of months schools were taught	5.59
Value of public-school property	$757,181
Entire expenditure for public education	$1,021,33
Average monthly salary of teachers	$30.4
Whole no. of pupils in public and private schools	207,7
" " teachers " " " "	5,5

Normal Instruction.—Legal provision has not yet been made for normal instruction. There are three colored normal schools supported by foreign means; and normal courses are supplied by some of the colleges. This is the case in Roanoke College, at Salem, and (for females) in Hollins Institute, and Marion Female College. The Hampton Normal and Agricultural Institute is accomplishing an important work in the education of colored teachers. In 1875, it had 18 instructors and 243 students.—*Teachers' institutes* are held in most of the counties of the state; and the larger of these receive assistance from the Peabody fund.

Secondary Instruction. — Three cities have public high schools. separated from the lower grades, and organized somewhat differently. But, commonly the higher branches form a mere continuation of the lower, and are somewhat interwoven with them; and, as a means of supplementing the public funds, a law, passed in 1874, allows a tuition fee to be charged of $2.50 per month, which is the only fee allowed in connection with the public-school system. Efforts are making to define the limits of secondary education, both public and private.

Private and Corporate Schools.—Taking all grades of education, about 25,000, or less than one-eighth of the school-going population, are now educated outside of the state schools. The number of private schools (exclusively primary) is about 650. They are chiefly alphabet schools, or those intended for children of from five to ten years of age. There are also from 160 to 175 private schools, called academies or classical schools, nearly every one of which has a primary department in which a majority of the pupils are found. A few schools (including some orphan asylums) are supported by church contributions, the most of which are Catholic or Episcopal. A large proportion of the academies, particularly those for girls, are under some special denominational influence. Superior teachers are often found in these schools, both for females and for males. Female incorporated academies are more numerous, and generally better provided for than those for males, and some of them are called colleges. But as respects college education proper, there has been no provision made for girls from either private or public means, to be compared with that made for boys. The higher branches are taught, to a greater or less extent, in about seventy female schools, twenty of which are incorporated. There are about sixty private male schools for secondary instruction, only six of which are incorporated. Some of the corporate academies have small endowments, but the great majority of the schools are wholly dependent on tuition fees and board bills. Besides the academies for one or the other sex, there are about 40 in which girls and boys are taught together. There is a very small number of eleemosynary boarding-schools, supported by the annual interest of funds given by benevolent individuals. The number of pupils in private schools, both primary and secondary, in 1875, was 23,285, of whom 19,466 were white, and 3,819. colored children.

Superior Instruction.—The important institutions of this grade are enumerated in the following table:

NAME	Location	When founded	Religious denomination
Emory & Henry Coll..	Emory	1838	M. E. S.
Hampden Sidney Coll.	Hamp. Sidney	1775	Presb.
Randolph Macon Coll.	Ashland	1832	M. E. S.
Richmond College...	Richmond	1841	Baptist
Roanoke College......	Salem	1853	Luth.
University of Virginia	Charlottesville	1819	Non-sect.
Washington & Lee Un.	Lexington	1749	Non-sect.
William & Mary Coll..	Williamsburg	1693	Non-sect.

(For further information in regard to these institutions, see under their respective titles.)

There were 9 institutions for the superior instruction of women that reported to the United States Bureau of Education in 1875, as follows: Albemarle Female Institute (non-sectarian), at Charlottesville; Farmville College (Meth. Epis. S.), at Farmville; Hollins Institute (Baptist), at Botetourt Springs; Marion Female Institute (Evangelical Lutheran), at Marion; Martha Washington College (Meth. Epis.), at Abingdon; Petersburg Female College (Methodist), at Petersburg; Southern Female College (non-sectarian), at Petersburg; Virginia Female Institute (non-sectarian), at Staunton; and Wesleyan Female Institute (Meth. Epis. S.), at Staunton. Most of these institutions are authorized to confer degrees.

Professional and Scientific Instruction.—The institutions which afford instruction in science, theology, law, and medicine, are enumerated below:

SCHOOLS OF SCIENCE.

NAME	Location	When founded	No. of instructors	No. of students
Hampton Normal and Agricultural Institute........	Hampton	1870	20	208
New Market Polytechnic Institute....................	New Market	1870	—	—
Virginia Agricultural and Mechanical College.......	Blacksburg	1872	7	222
Virginia Military Institute.	Lexington	1839	18	221

The Hampton Normal and Agricultural Institute is a manual labor school, and a reproduction of the Lahainaluna School in the Sandwich Islands. It is intended for colored students of both sexes. The boys are taught (besides the ordinary elementary and academic branches) farm work and carpenter work, and the girls, sewing and domestic work. It was established by northern people, in conjunction with the Freedmen's Bureau, and has received probably $500,000 from sources beyond the state. The Virginia Agricultural and Mechanical College was opened in 1872, and is supported almost exclusively by the proceeds of two-thirds of the land scrip donated by Congress, the other third having been assigned to the colored school at Hampton—the entire proceeds of the scrip amounting to about $30,000. The state legislature has given $45,000 for buildings, and $20,000 was paid by the county where it is located (Montgomery). The scheme of the college fixes it at about the grade of a high school, with special scientific and practical developments. It has a three years' curriculum, bifurcating after the first year into a special agricultural and a special mechanical course, each of two years. The Virginia Military Institute was opened at Lexington, in 1839, on a plan similar to that of West Point, and at once became popular. The annuity, originally $6,000, was subsequently increased to $15,000; and the number of cadets, before the war was about 250 (50 of them being state cadets). The buildings were burned in 1864; but since the war they have been restored, and the institution has been more flourishing than ever. The academic staff consists of 11 professors and 9 assistants, the course of study, which is chiefly of a military and scientific character, being arranged for four years. Instruction in industrial chemistry, civil and mining engineering, and agriculture, is also given in special departments of the University of Virginia, and in civil and mining engineering in Washington and Lee University.

SCHOOLS OF THEOLOGY.

NAME	Location	When founded	Religious denomination
Richmond Institute..	Richmond	1868	Baptist
St. John's Theol. Sem.	Norfolk	—	R. C.
Theol. Sem. of the Ev. Luth. Church......	Salem	1831	Luth.
Theol. Sem. of the Prot. Epis. Church.	Fairfax Co.	1823	Pr. Epis.
Union Theol. Sem. of the Gen. Assembly.	Hampden Sidney	1824	Presb.

The Richmond Institute was established for the purpose of preparing colored young men for the ministry, or for teaching. The qualifications for admission are a good moral character and fair intellectual ability. The number of instructors, in 1875, was 3; the number of students, 45. The Theological Seminary of the Evangelical Lutheran Church, in 1875, had 3 instructors and 11 students; the Theological Seminary of the Protestant Episcopal Church, during the same year, had 5 instructors and 51 students; and the Union Theological Seminary of the Presbyterian General Assembly, 4 instructors and 74 students.—Law is taught in the Law School of the University of Virginia, and the School of Law and Equity of Washington and Lee University. In the former, the number of instructors, in 1875, was 2; the number of students, 93; in the latter, 2 instructors and 17 students.—The Medical College of Virginia, at Richmond, is the only medical school in the state not connected with a college or university. It was founded in 1851, and, in 1875, had 18 professors and instructors and 37 students. The course of study covers 2 years. Instruction in medicine is also given in the medical department of the University of Virginia, which provides a course of a year, and, in 1875, numbered 50 students and 5 professors. The equipment of the latter department for medical instruction is very complete, and, in some respects, its facilities for this purpose are unequalled.

Special Instruction.—The Institution for the Education of the Deaf and Dumb, and the Blind, was opened in 1838, at Staunton. Instruction is given in the elementary branches of an English education, and in several trades and mechanical pursuits. There were 7 instructors and 100 pupils in the deaf-mute department, in 1875; and in the department for the blind, 8 instructors and employés, and 42 pupils. The Miller Manual Labor School had not been opened up to the summer of 1876; but it has an endowment of $1,000,000 left for its foundation by the will of Samuel Miller, of Lynchburg, who died in 1869, leaving also the sum of $300,000 for founding and maintaining an orphan asylum at Lynchburg, and $100,000 to the University of Virginia for an agricultural department. The Manual Labor School, in the county of Albemarle, is for the benefit of the poor orphan white children of that county.

Educational Literature.—The *Educational Journal* (monthly) is published jointly by the state association of teachers and the superintendent of public instruction, 12 pages of which are official, and paid for out of the school funds. A copy of the journal is sent to each county superintendent, and also to the clerk of each district school board.

VIRGINIA, University of, in Albemarle Co., Va., a mile and a half west of Charlottesville, was chartered in 1819 and opened in 1824. It owes its organization, plan of government, and system of instruction to Thomas Jefferson. It is partly supported by an annual state appropriation of $30,000, and partly by tuition fees. In consideration of the appropriation, the university receives, free of tuition in the academic schools, students from the state over 18 years of age who have a suitable preparation. The tuition fees are ordinarily from $75 to $110 per year. The university library contains 36,000 volumes. Applicants for admission must be at least 16 years of age. In establishing the university of Virginia Mr. Jefferson, for the first time in America, threw open the doors of a University, in the true sense of the name, providing, as amply as the available means would permit, for thorough instruction *in independent schools*, in all the chief branches of learning. Every student may select the schools he will attend, but in the academic department he is required, as a rule, to attend at least three. The professors are paid in part by salaries, and in part by tuition fees from pupils who attend their several schools. The schools in operation are as follows: 1, Latin; 2, Greek; 3, modern languages; 4, moral philosophy; 5, history, general literature, and rhetoric; 6, mathematics; 7, natural philosophy (including mineralogy and geology); 8, general and applied chemistry; 9, applied mathematics, engineering, and architecture; 10, analytical and agricultural chemistry; 11, natural history, experimental and practical agriculture; 12, comparative anatomy, physiology, and surgery; 13, anatomy and materia medica; 14, medical jurisprudence, obstetrics, and the practice of medicine; 15, chemistry and pharmacy; 16, common and statute law; 17, equity, mercantile, international, constitutional and civil law, and government. The academic degrees conferred by the university are those of (1) Proficient, for satisfactory attainments in certain subjects of study; (2) Graduate in a school; (3) Bachelor of Letters; (4) Bachelor of Science; (5) Bachelor of Arts; and (6) Master of Arts. The professional degrees are Bachelor of Law, Doctor of Medicine, Civil Engineer, Mining Engineer, and Civil and Mining Engineer. No fixed time is required for the attainment of a degree; but, in some of the principal schools, the course commonly occupies three years. In 1875—6, there were 17 instructors and 330 students. James F. Harrison, M.D., is (1877) the chairman of the faculty.

VOICE, Culture of the. The human voice may be considered as the audible expression of the mental and physical characteristics of its possessor; and, therefore, no means employed in the varied processes of education are of more importance than those that have regard to its culture. Its powers are often widely misunderstood and misapplied, sometimes abused and destroyed. In the very beginning of education, large numbers of boys, in addition to marked inherited peculiarities, such as defective ears, weak lungs, asthmatic and husky bronchial tubes, contracted chests, elongated palates, and inflamed, swollen tonsils, are permitted to indulge in the pernicious habit of loud shouting and hurrahing, and in the baleful and distressing use of the chest tones, so frequently heard in the singing of male pupils. Every boy should be made to understand that if he thus abuses his voice, he must not expect to overcome his constitutional defects, or retain a tone which, even by assiduous practice, will become agreeable to his audience, in reading, declamation, or vocal music. Girls, while in many instances they have all the inherited disadvantages above referred to, present, through their more delicate organization and guarded habits, far more promising material for the production of purely musical effects. Parents and teachers may well take warning, also, in the education of either boys or girls, against a long-continued strain upon their vocal chords. Many a young voice has been completely ruined by this untimely forcing of the powers of the youthful candidate for declamatory or musical honors. A child five years of age, for example, is placed on a chair, to amuse a large audience, by speaking or singing in a forced utterance, and with an unnaturally loud chest tone, entirely beyond its years, or powers of endurance. Such a tax upon its vocal chords, if long continued, is exceedingly injurious. The medium or falsetto tone, that most mellow, most musical, most sweet and expressive part of the female voice, or of the unchanged voice of the boy, gradually deteriorates, and is finally lost by this injurious process. The remedy for this destruction lies in the early protection of the health, and in the careful use of the young voice, at home, in school, in the church, and wherever there is any danger of this overstraining of its powers. The vocal exercises should be within a limited compass, — neither too high nor too low. All forcing of the voice should be positively forbidden and avoided; and each lesson should come to a close without fatigue. An easy and systematic mode of breathing should be an early acquisition, since it lies at the foundation of all success in singing, as well as in speaking. Tone, of itself, being nothing more nor less than breath, or air in motion through contact with a sonorous body, it is important to know, to some degree at least, the character of the organs which enter into the production of vocal tone. All cultivated speakers and singers are conscious of a thorough employment of the abdominal muscles, and of those of the diaphragm, in order to secure complete control of the breath. *Inhaling*, however, may be carried to excess, a result well known to professional dramatic vocalists, who often protect themselves against rupture by wearing shoulder braces, trusses, and abdominal supporters. *Exhaling* involves that careful use of the diaphragm, which keeps the intercostal nerves and muscles in a state of tension, in order that the lungs may have their fullest play. To know when and where to inhale and to exhale, is as necessary to the speaker, in his written or extemparaneously delivered sentences, as it is to the singer, in the enunciation of his musical phrases; and, in such case, it assumes the dignity of consummate art, — an indispensable and prime necessity to the conscientious interpreter of either classic language or classic music. Without ease, sustained repose, and a method made effective through long habit, in the management of the breath, all subsequent attention to details in the art of speaking or singing is measurably lost. Demosthenes, with pebbles in his mouth, declaiming to the winds and waves on the sea-shore, and Braham, lifting up his voice amid the hills and forests of Northumberland, may profitably be remembered and imitated by all students who desire to remedy defects, and to acquire new breathing power. — A graceful attitude, and thorough skill in the proper use of the breath being gained, the close sympathy always existing between the bronchial tubes and the stomach next demands attention. A rapid and complete digestion is esteemed by all intelligent persons the greatest of physical blessings; and to no one is it a more necessary condition of success than to the public speaker or singer. So important is this to the professional vocalist, that those times, in the daily routine of duty, which find the lungs and bronchial tubes freest from the oppression arising from sympathy with the stomach, in its process of digestion, should be selected for practice. Proceeding upward toward the organs of articulation, we arrive at the trachea, or windpipe, the larynx, and the pharynx. It is a prolific subject of discussion among speakers and singers, whether the character of the tone depends as much upon the size of the lungs, the bronchial tubes, the windpipe, the larynx, and the pharynx, as it does upon the condition of the muscles and nerves, and more remotely still upon the general organization, temperament, will, and endurance of the speaker or singer. It is surprising to notice the compass and the variety of tone which the larynx can produce, by using the vowels alone. Beginning with the lowest sounds of the base voice, and ascending in regular order through its limits, of one and a half or two octaves; through the compass of the baritone, with a similar register, though somewhat higher in pitch; and, successively, through the registers assigned to the tenor, contralto, mezzo-soprano, and soprano voices, there is embraced a compass of four octaves of available tones, susceptible of cultivation to an almost infinite degree of excellence. Base voices confine themselves mainly to the use of the chest tones throughout their entire register; but the barytones by a prudent use of the somber tone, and of the medium register, greatly increase the pure quality and flexibility of the higher portions of their voices. For the orator or declaimer, there is no quality of tone comparable to that of the orotund base or barytone voice; and, in the oratorio and opera, it is assigned to characters of inherent dignity and force. The tenor voice, undoubtedly, demands a combination of native and acquired qualities, which, in some countries, are exceedingly rare. In its uncultivated state it is thin, reedy, and somewhat nasal; but steady, persevering practice upon the open vowels *ah*, *oh*, and *oo*, soon corrects this defect, and renders the tenor, of all male voices, the most tender and expressive. Great care should be exercised by tenor voices, lest the clear *timbre* of the chest tone be carried too high, thereby crushing out the delicacy of the real medium register, which is the most flexible and available part of the tenor voice. The contralto, mezzo-soprano, and soprano voices encounter a similar difficulty, at the very outset of their practice, in combining the chest with the falsetto or medium voice. While this difficulty occurs in the higher register of the male voice, it is found in the lower register of the female voice, and presents obstacles in the way of cultivation, which nothing but long and persistent practice can overcome, though the strain upon the nervous system is far less than that experienced by the male voice. The contralto yields to no other female voice in depth and richness of tone, as is clearly evident after listening to singers like D'Angri and Alboni. Naturally not so flexible as the soprano or mezzo-soprano, it is yet endowed with a wonderful power in causing effects replete with the most ardent passion, and with the most noble womanly feeling. There is a great temptation to abuse the lower register of the contralto voice by indulging in the disagreeable habit of forcing the chest tones to a point bordering upon masculineness, if not positive coarseness. The practice of descending runs, diatonic and chromatic, using the medium, veiled, or somber tone, will gradually change this objectionable habit. There are not wanting cases, either, of contralto voices which have been destroyed by attempts to cultivate the tone and compass of the soprano,—a process absurd and unnatural to the last degree. Notwithstanding the efforts of some late authors to ignore the division of the female voice into at least three different registers, namely, the chest, the medium or falsetto, and the head; these registers are now generally recognized by the highest and most competent authorities. Elaborate methods and studies for the development of the contralto, mezzo-soprano, and soprano voices have been devised with these three divisions constantly in view. Some even assert that there are five distinct registers, requiring as many different modes of producing the tone,—a condition of the larynx and pharynx suggesting an expertness in the management of the voice which may well be deemed bewildering. It is, however, too certain to admit of a doubt, that the voices of the most accomplished female vocalists living have been trained by recognizing this division into the chest, medium or falsetto, and head registers, and are, moreover, preserved in their wonted availability by adhering to the same method. Allusion has been made to the pharynx, or arched chamber immediately back of the palate, a most important modifier of the voice in its passage from the larynx, and the expansion and contraction of which gives greater or less volume of tone, especially if the root of the tongue be not artificially enlarged, so as to produce an impure *throatiness* of tone, frequently heard in voices imperfectly cultivated and badly managed. To know the important influence of a healthy pharynx under complete control, it is only necessary to compare the voice of one possessing it, with that of a vocalist suffering with a cold in the head, or with a catarrhal affection and swollen tonsils. The difference in the clearness of the vibrations, and in the diffusive character of the tone, is very perceptible and marked.—A clear knowledge of the organs which are employed in producing a vocal tone, and of the proper combination of the registers to secure power, purity, and equality throughout the entire vocal compass being gained, the organs of articulation present themselves for particular consideration; and this leads directly to the subject of musical elocution. System and facility in breathing, the employment of all the proper organs, in their healthy condition, for the production of a pure tone, expertness in reading music, and the minutest attention to attitude and gesture, will all fail to produce an impression worth remembering, unless a true conception of the meaning of the words and music, a bold enunciation, a distinct articulation, a well-rounded phrasing, and an accurate intonation be added to the acquirements of the finished vocalist. *Conception* relates to both words and music. If it be necessary for the speaker to study well the signification of words, in order to get at the true meaning of the poet, it is even more necessary for the singer to do so, since the effect of melody and harmony upon all persons, is such as to deprive them, measurably, of the power, for the time being, of judging of the signification of words. The singer who rests upon the simple effect of his melody, is certainly as weak as the speaker who relies upon his manner of uttering fine language, rather than upon the strength of the ideas involved. A true conception, it is hardly necessary to add, is the rarest of possessions among modern vocalists. *Pronunciation*, in its musical connection, not only implies that enunciation, or careful throwing out of each syllable and word which good speech and declamation require, but also that which, not particularly recognizing the inflections of reading or declamation, is entirely absorbed in the far more permeating channel of sound, a melody or recitative song according to a given key or scale. Dr. Rush alludes to this as the special advantage which the singer has over the speaker. Slowness and quickness of utterance are also controlled, to so great a degree, in music, by the relations of the notes, the bar, the fractional measure-marks, and words indicating varieties of movement, that there is left less liberty to the singer than to the speaker, in many respects. But such curtailment of liberty (which liberty, by the way, is often a clog to inexperienced speakers), and, by consequence, greater concentration upon the characteristics of the melody, only tie the singer to a more vivid conception of the subject, and to a more distinct pronunciation of the words. For the correction of marked inelegancies of pronunciation, whether of foreign or native growth, no means are so effective as the careful study of the classic languages, together with the study of the principal modern languages taught by native professors. Of these latter, the Italian is most musical in itself, and, therefore, is most useful to the musical student, whose pronunciation of his native language, particularly if he be English or German, will be vastly improved by often reading and singing in the most euphonious of modern languages. Of distinct *articulation*, it may in general be said, that the vowels only are sung, while the consonants are articulated; in other words, that the vowels are *sung*, and the consonants are *spoken*. In vocalizing alone, the larynx, obedient to the mind and will, performs unassisted, save by the lungs, trachea, pharynx, and diaphragm, all those changes which promote power, purity, sweetness, and flexibility of tone. Some slight changes in the position of the jaws, tongue, and lips are necessary in vocalizing with *ah*, *ee*, *oh*, and *oo;* but only the consonants, as initial, intermediate, or final letters, require a constant and vigorous use of the tongue, teeth, and lips, which are the chief agents in acquiring an effective articulation. Full respirations should be the rule, and partial respirations the exception. In plain music, where one or two notes are appropriated to a syllable, the article should not be separated from the noun or qualifying adjective, nor the adjective from the noun, by a separate breathing; nor should the syllables of a word be separated. Long diatonic or chromatic runs, *arpeggios*, trills, and *cadenzas*, must, however, be executed with an unbroken continuity of the musical phrase. The orotund *basso* or barytone, as well as the rich and deep contralto, require to be particular in their articulation, in order to be heard, since the very fullness of their voices produces a resonance not easily overcome in large assembly rooms. Good *phrasing* implies good singing; such a knowledge of the composer's idea on the part of the singer, as shall not mar, to say the least, either the poetic or musical symmetry of what is sung. The singer should be able to analyze the phrases he sings, in order that, in melodic and harmonic construction, he may discover where they begin, how they progress, and where they end. But, if he cannot do this, he should be able, intuitively to grasp a musical passage to the fullest extent of its melodic proportions, and spontaneously to present it with such accessories as shall make it appear his own. All the bright coloring which may be imparted by a vivid conception, a good pronunciation and articulation, will be seriously dimmed by defective phrasing. Last, but by no means least, there must be the accurate *intonation* which is the result of a correct ear. Some persons do not hear correctly, concords becoming to them discords. Whether it be a local difficulty of the tympanum, or, as is more probable, a rigidity of the entire organization and sluggishness of temperament, the fact is obvious that defective ears are by no means uncommon; and, of course, to imitate musical sounds with the voice, in such cases, is an impossibility. The commonness of the defect increases, as we proceed low in the scale of social being, particularly where, in addition to poverty and moral degradation, there is superadded the prolific cause, absence of youthful opportunities of hearing music well sung or played. Could all classes, without exception, be gladdened, when young, by hearing music correctly sung and played, the number of those who pass through life unmoved "by the concord of sweet sounds," would be much diminished. It is important, also, that the sounds heard by children, be correct both as to melody and rhythm, if it be expected that such children, when grown, shall have a so-called good ear for music. In remarking upon articulation, the value of the vowel sounds *ah*, *ee*, *oh*, and *oo* was noticed; and it is known that a thorough scale, and rhythmical use of these, combined with all the consonants as initial and final letters, will not only develop a more distinct articulation, but also a purer, more effective, and manageable tone. For standard authorities, on this subject, see Rush, *Philosophy of the Human Voice* (Phila., 1833); Édouard Fournière, *Physiologie de la Voix et de la Parole* (Paris, 1866); Emanuel Garcia, *École du Chant* (London); Bassini, *Art of Singing* (Boston, 1856); *New Method* (Boston, 1869); Emma Seiler, *The Voice in Singing* (Phila., 1868).

WABASH COLLEGE, at Crawfordsville, Ind., chartered in 1833, is under Presbyterian control. It has productive funds to the amount of $240,000, and libraries containing 17,000 volumes. It has an English and commercial. a preparatory, and a collegiate department, the latter with a classical and a scientific course. The cost of tuition is from $24 to $30 a year. There are several scholarships. In 1875—6, there were 12 instructors and 220 students (104 collegiate, 64 preparatory, and 52 English and commercial). The Rev. Joseph F. Tuttle, D. D., is (1877) the president.

WACO UNIVERSITY, at Waco, Tex., founded in 1861, is under Baptist control. It has a small endowment, but is supported chiefly by tuition fees, the regular charge ranging from $15 to $25 per term of five months. The libraries contain about 2,500 volumes. It has a preparatory department, a collegiate department for females, and a classical and a scientific collegiate course for males. In 1875—6, there were 11 instructors and 279 students (157 males and 122 females). The Rev. Rufus C. Burleson, D. D., is (1877) the president.

WAKE FOREST COLLEGE, in Wake Co., N. C., founded in 1834, is under Baptist control. It is supported by tuition fees ($35 per term of five months) and the income of an endowment of $25,000. The libraries contain about 8,000 volumes. The course of study comprises six schools—Latin, Greek, modern languages, mathematics, natural science, and moral philosophy. There is also a preparatory and a commercial course. In 1875—6, there were 5 professors and 91 students. The presidents have been: the Rev. Saml. Wait, D.D.; the Rev. Wm. Hooper, LL. D.; the Rev. John B. White; and the Rev. W. M. Wingate, D. D., the present incumbent (1877).

WASHINGTON. See DISTRICT OF COLUMBIA.

WASHINGTON COLLEGE, at Washington, Alameda Co., Cal., founded in 1872, for the education of both sexes, is a non-sectarian institution. It has a preparatory, and an academic department with a four years' course. French, Spanish, German, Greek, and Latin, instrumental and vocal music, painting, drawing, etc. are optional studies. The institution is supported by the fees of students, the charge for tuition being from $50 to $80 a year. In 1875—6, there were 10 instructors and 176 students. Silas S. Harmon, A. M., has been the principal since the opening of the college.

WASHINGTON COLLEGE, at Chestertown, Md., founded in 1782, is a non-sectarian institution. There is a preparatory and a collegiate department. The cost of tuition, except to holders of scholarships, ranges from $40 to $60 a year. The library contains about 1,300 volumes. In 1875—6, there were 3 instructors and 37 students (10 preparatory and 27 collegiate). The presidents have been the Rev. Dr. Wm. Smith, the Rev. Dr. Colin Ferguson, Dr. Clowes, the Rev. Dr. Waters, R. W. Ringold, the Rev. A. J. Sutton, R. C. Berkeley, and Wm. J. Rivers, the latter since 1873.

WASHINGTON AND JEFFERSON COLLEGE, at Washington, Pa., under Presbyterian control, was formed, in 1865, by the consolidation of Jefferson College (at Canonsburg, chartered in 1802), and Washington College (chartered in 1806). The former grew out of the Canonsburg Academy, opened in 1791; the latter had its origin in the Washington Academy, chartered in 1787, and opened in 1789. The consolidated institution has an endowment of $220,000, a cabinet, and libraries containing 9,000 volumes. Tuition to holders of scholarships is free; to others the fee is $24 a year. There is a preparatory and a collegiate department, the latter having a classical and a scientific course. In 1875—6, there were 8 professors and 175 students (140 collegiate and 35 preparatory). The presidents have been as follows: the Rev. Jonathan Edwards, D. D., LL. D., 1866—9; the Rev. Saml. J. Wilson, D. D., LL. D. (*pro tem.*), 1869; the Rev. James J. Brownson, D.D. (*pro tem.*), 1870; and the Rev. Geo. P. Hays, D. D., since 1870.

WASHINGTON AND LEE UNIVERSITY, at Lexington, Va., was chartered in 1782. Its germ was a mathematical and classical school, called the Augusta Academy, established, in 1749, near the site of Greenville, Augusta Co. In 1776, the name was changed to Liberty Hall. After several removals, it was located near Lexington, in 1785; and, in 1803, it was finally removed to its present site, within the limits of the town. The first commencement was held in 1785. In 1796, Washington donated to the institution the 100 shares of stock in the old James River Company, which the legislature had given him, and the name was changed to Washington College. In 1803, the Cincinnati Society appropriated their funds, nearly $25,000, to the college. During the civil war, the institution was suspended. Soon after the death of Gen. Lee, in 1870, the present name was adopted. The university is supported by tuition fees (generally $70, a year, in the academic departments, and $85, in the professional departments), and the income of endowments amounting to $200,000. It has a library of 12,000 volumes, mineralogical, geological, and zoölogical cabinets, and valuable philosophical and chemical apparatus. The distinguishing features of the university are: (1) The arrangement of the course of study into distinct elective schools or departments; (2) The adaptation of the several departments to *certain courses of study*, to each of which is attached a corresponding degree. No degrees are conferred *in course;* but all are based upon actual attainments in a completed course of study. The full course for Bachelor of Philosophy is 3 years; for Bachelor of Science and Arts, and Civil and Mining Engineer, 4 years. In 1876, there were 15 instructors and 196 students. The presidents have been as follows: the Rev. Wm. Graham, A. M., 1782—96; Samuel L. Campbell, M. D., 1796—9; George A. Baxter, D. D., 1799—1829; Louis Marshall, M. D., 1830–34; Henry Vethake, LL. D., 1834—6; Henry Ruffner, D. D., LL. D., 1836—48; George Junkin, D. D., 1848—60; Gen. Robert E. Lee, 1865—70; and Gen. G. W. Custis Lee, since 1871.

WASHINGTON TERRITORY, one of the north-western territories of the United States, originally a part of Oregon, but organized as an independent territory in 1853. Its area is 69,994 sq. m.; its population, in 1870, was 37,432, of whom 22,195 were whites, 207 were colored persons, 234, Chinese, and 14,796, Indians.

Educational History.—The first educational act of the territorial assembly was in 1862, when the University of the Territory of Washington was established, two townships of the public lands having been previously set apart by Congress for its endowment. Special legislation for the advancement of school interests has, from time to time, taken place, but no law securing uniformity in the administration of the schools was enacted till 1872, when the foundation of the present school system was laid by the enactment of a general law. The first territorial superintendent was Nelson Rounds, who was appointed in 1872. His successor was J. P. Judson, the present incumbent (1876), appointed in 1874.

School System.—A territorial superintendent of common schools is appointed biennially by the governor, with the consent of the council. His duties are those usually devolving upon general superintendents. *County superintendents* are also elected biennially. They are required to possess the qualifications of a teacher, before being eligible. Three *school directors*, in each district, are elected, one each year. They make out tax lists for assessments, build school-houses, employ teachers, and visit the schools twice each session. The permanent school fund is prospective only, being derivable from school lands which cannot be sold till the territory becomes a state. The schools are maintained by an annual four-mill tax on every dollar of taxable property, a county tax of not more than eight mills, a district tax of three mills, fines under criminal statutes, and private contributions. Districts, also, may levy a tax of ten mills for building and repairing school-houses. Sectarian instruction in the common schools is forbidden by law. The school month consists of 4 weeks of 6 days each; the school age is from 4 to 21 years.

Educational Condition. — The number of school-districts, in 1875, was 267; and the number of districts in which schools were kept was 219. The amount of school moneys for distribution, in the same year, was $53,557.

The principal items of *school statistics*, for 1874—5, are as follows:

Number of children of school age.............	8,350
" " " enrolled in schools.......	6,699
" " teachers........................	220

The principal schools are at Olympia, Port Townsend, Vancouver, Seattle, and Tacoma. *Teachers' institutes* have been held in some counties, and a *teachers' association* has been organized. The university at Seattle provides a preparatory, an academic, and a collegiate department, to all of which both sexes are admitted. Holy Angel's College (q. v.), at Vancouver, is controlled by the Roman Catholics. It has two courses,—a preparatory, and a collegiate.

WASHINGTON UNIVERSITY, at St. Louis, Mo., was incorporated in 1853 and formally inaugurated in 1857. The charter provides that the institution shall be non-sectarian. It is supported by the income of an endowment of $500,000, and by tuition fees ranging from $50 to $160 a year. There are several scholarships, entitling the holders to free tuition. The university comprehends five departments: the academy, Mary Institute (founded in 1859), the college (organized in 1859), the polytechnic school (1857), and the law school (1867). The course of instruction in the academy extends through five years, and includes those studies which are preparatory to the College and the Polytechnic School of the University. It has also a primary and a commercial class. Mary Institute is a female seminary. Its grounds and buildings are distinct from those of the other departments; but the chancellor exercises a general supervision; and instruction in the languages, the higher mathematics, and the natural sciences is in part given by the professors of the college and the polytechnic school. The institute affords various grades of instruction from primary to collegiate. The course in the college (4 yrs.) leads to the degree of A. B. The polytechnic school (O'Fallon Polytechnic Institute) has six regular courses of study (4 yrs. each), as follows: (1) civil engineering; (2) mechanical engineering; (3) chemistry; (4) mining and metallurgy; (5) building and architecture; (6) a general course. The Polytechnic Institute also carries on a free evening school for instruction in the elements of technology, under the immediate supervision and control of the board of directors of the public schools of the city. The law school (St. Louis Law School) has a library of over 2 500 volumes. The university library contains 3,000 volumes. In 1875—6, the number of instructors in all the departments was 65; of students, 902. The chancellors of the university have been Joseph Gibson Hoyt, 1859—63; Wm. Chauvenet, 1863—71; and Wm. Greenleaf Eliot, D. D., since 1871.

WAYLAND, Francis, an American clergyman and educator, born in New York, March 11., 1796; died in Providence, R. I., Sept. 30., 1865. He graduated at Union College in 1813, studied medicine, and was licensed to practice; but, meanwhile, his purpose was changed; and, in 1816, he entered the Andover Theological Seminary. The instructions of Prof. Moses Stuart enkindled in his mind an intense enthusiasm for study; but poverty compelled him to leave the institution. During the next four years, he was a tutor in Union College; and, in 1821, became pastor of the First Baptist Church, in Boston. In 1826, he was appointed professor of mathematics and natural history in Union College, and, early in 1827, was chosen president of Brown University, and entered on what was to be the work of his life. The college was in a depressed state. The funds were inconsiderable; there was scarcely library, cabinet, or apparatus; and the standard of character, discipline, and scholarship was low. The new president sought, first of all, to raise the standard. In the recitation room, he introduced thoroughness, exactness, self-dependence, and freedom of inquiry. He aimed to teach, not the text-book, but the subject. He encouraged questions germane to the topic. Finding that the text-books in use were inadequate, he taught by lectures, till in time he created text-books in the different branches. He next sought to increase the material means of instruction. A fund of $25,000 was raised for the increase of the library and the apparatus; a library building, a laboratory, and a house for the president were erected; the library was also increased by special subscriptions outside of the fund; and several new departments of instruction were created. Yet, with the lapse of time, the conviction grew in the mind of the president that the college was not fulfilling its destiny. His dissatisfaction with the American college was expressed in his little book, *Thoughts on the Present Collegiate System in the United States* (1842); but no remedy was suggested. Gradually, his mind worked itself clear; and, in 1850, his *Report to the Corporation of Brown University* indicated both the evil and the remedy. The American colleges were not meeting the demands of the American people. They were molded by the traditions of the middle ages rather than by the wants of the 19th century. They were offering an education suited only to a limited class, to the members of the learned professions, especially the ministry, and were ignoring the large and increasing industrial classes. They were setting at naught the diversity of character and needs on the part of young men. They were crowding a vast number of studies into a limited period of time, and were precluding the hope of high attainments in any department. The president proposed to enlarge the scope of the college, by offering its advantages to every class, welcoming the farmer, the mechanic, the artisan, and not compelling any one to pursue classical studies against his will. He desired also to afford the student the means of attaining high excellence in whatever department he entered. The principles of the *Report* were carried into practice, not indeed as completely as the president desired, but far enough to afford marked and satisfactory results. Dr. Wayland's views of theological education were similarly practical and liberal.—The labors attending the re-organization of the university had been exhausting in the extreme; and, in 1855, Dr. Wayland felt compelled to resign the presidency. In 1857—8, he acted for sixteen months as pastor of the First Baptist Church in Providence. The remainder of his life he passed in retirement, in study, and in such benevolent and religious labors as his strength allowed. In addition to the works named above, he published *Moral Science* (1835); *Political Economy* (1837); *Limitations of Human Responsibility* (1838); *Intellectual Philosophy* (1854), and many other volumes, besides numerous sermons, articles, tracts, and addresses.

WAYNESBURG COLLEGE, at Waynesburg, Pa., founded in 1850, is under Cumberland Presbyterian control. It is supported partly by tuition fees and partly by the income of its endowments, amounting to $50,000. The cost of tuition is $20 a year. The libraries contain about 2,000 volumes. It has a classical, a scientific, a *ladies'*, a normal, and a commercial course. In 1875—6, there were 10 instructors and 297 students (82 collegiate, 115 preparatory, and 100 unclassified). The presidents have been as follows: the Rev. Joshua Loughran, A. M., 4 years; the Rev. J. P. Weethee, A. M., 3 years; John C. Flenneken, 1 year; and the Rev. A. B. Miller, D. D., the present incumbent, 17 years.

WEAVERVILLE COLLEGE, at Weaverville, 9 m. N. of Asheville, N. C., chartered in 1873, is a non-sectarian institution. It is beautifully situated in one of the most picturesque regions of North America. It has a primary, a preparatory, and a collegiate department, to all of which both sexes are admitted. The cost of tuition ranges from $6.50 to $18 per session of five months. In 1875—6, there were 7 instructors and 123 students (collegiate, 21; scientific and preparatory, 74; academic and primary, 28). The Rev. James S. Kennedy, D. D., is (1877) the president.

WEBSTER, Noah, an American lexicographer, was born in West Hartford, Ct., Oct. 16., 1758; died in New Haven, May 28., 1843. After graduating at Yale College in 1778, he taught school for some time at Hartford. In 1782, he opened a classical school at Goshen, N. Y.; and, in 1787, he became for one year, principal of an academy in Philadelphia. He began the preparation of school books as early as 1783, in which year he published the *First Part of a Grammatical Institute of the English Language*. This first part was followed, in the course of the next two years, by the second and third parts: and it was the basis of Webster's spelling books, which, in various editions and revisions, met with a success unparalleled in the history of educational literature, as 70,000,000 copies, it is said, had been sold of them up to the end of 1876. After spending several years in the practice of law, in publishing periodicals and other literary works, Webster engaged, in 1807, upon the great work of his life, the *American Dictionary of the English Language*. It was not completed until 1828, when an edition of 2,500 copies was published in the United States (New York, 2 vols., 4to.), which was followed by an edition of 3,000 in England. In 1840—41, a second edition of 3,000 copies was printed; and a revised appendix was published soon after the author's death, in 1843. In 1847, Prof. Chauncey A. Goodrich, of Yale College, Webster's son-in-law, published a thoroughly revised edition of the Dictionary, at Springfield. After the death of Professor Goodrich, in 1860, the direction of the work of revision was committed to Professor (subsequently President) Noah Porter, of Yale College, who published a new and thoroughly revised edition, in 1864, at Springfield. He had been assisted in the revision by a large number of distinguished scholars, among whom were Professors James D. Dana, William D. Whitney, Chester S. Lyman, Daniel C. Gilman, Thomas A. Thatcher, James Hadley, all of Yale College, and Dr. C. A. F. Mahn, of Berlin, Prussia, the latter of whom rewrote the entire etymological department. In this new shape, Webster's Dictionary is generally recognized as one of the most notable productions of the lexical literature of the world. Besides the works already mentioned, Dr. Webster wrote a *History of the United States*, revised about 1838; *Letters to a Young Gentleman commencing his Education* (New Haven, 1823), and a number of other works. A *Memoir of Noah Webster* is given in the editions of the dictionary of 1847 and 1864.

WEHRLI, Johann Jakob, a celebrated Swiss teacher of poor-schools, was born at Eschikoven, November 6., 1790, and died at Andwyl, March 15., 1855. He taught a small school at Leutenegg during two winters, working in part pay for his board. In 1809, he became an assistant to Fellenberg, in his school at Hofwyl, where he remained twenty-three years, bestowing the most assiduous care upon the poor children and scholars. (See HOFWYL.)

WESLEYAN UNIVERSITY, at Middletown, Ct., the oldest college in the United States under the patronage and control of the Methodist Episcopal Church, was organized in 1830, and chartered in 1831. Since 1872, its courses have been open to both sexes. It has an endowment of about $400,000, extensive astronomical, physical, and chemical apparatus, a valuable museum of natural history, and a library of over 26,000 volumes. The cost of tuition is $75 a year. There are three regular courses, each of four years: a classical course, a Latin-scientific course, and a scientific course; and in each there is a considerable range of elective studies. There are also special and post-graduate courses. In 1875—6, there were 14 instructors, and 176 students (9 females). The presidents have been as follows: the Rev. Wilbur Fisk, D. D., 1831—9; the Rev. Stephen Olin, D. D., 1839—41; the Rev. Nathan Bangs, D. D., 1841—2; the Rev. Stephen Olin, D.D., 1842—51; Augustus Wm. Smith, 1852—7; the Rev. Joseph Cummings, D. D., 1857—75; and the Rev. Cyrus Foss, D. D., since 1875.

WESTERN COLLEGE, at Western, Linn Co., Iowa, was founded in 1856 by the Church of the United Brethren in Christ, which still controls it. It has an endowment of $16,000, but has been chiefly supported by contributions. The college and society libraries contain 1500 volumes. The tuition and incidental fees are $25.50 a year. Both sexes are admitted. There is a classical and a scientific course, and a preparatory and a commercial department. In 1875—6, there were 11 instructors and 219 students (132 males and 87 females), of whom 37 were of collegiate grade. The presidents have been as follows: the Rev. Solomon Weaver, 1856—64; the Rev. Wm. Davis, 1864—5; M. W. Bartlett (principal), 1865—6; H. R. Page, 1866—7; E. C. Ebersole, A.M. (principal), 1867—8; and the Rev. Ezekiel B. Kephart, A.M., since 1868.

WESTERN MARYLAND COLLEGE, at Westminster, Md., was founded in 1867 and incorporated in 1868. It is under the special patronage of the Maryland Annual Conference of the Methodist Protestant Church. It is supported by contributions and the fees of students. The cost of tuition is from $17.50 to $30 a year. The institution has libraries comprising 3,500 volumes. Both sexes are educated, but in separate departments, though mainly by the same professors. The collegiate course for males extends over 4 years, and for females, 3 years. Facilities are also afforded for theological instruction. In 1876—7, there were 13 instructors and 113 students (66 male and 47 female, 65 collegiate and 48 preparatory). The Rev. J. T. Ward, D. D., has been the president from the commencement of the institution.

WESTERN RESERVE COLLEGE, at Hudson, Ohio, was chartered in 1826, and opened the same year. It is not under ecclesiastical control, but its trustees and professors are all connected with the Congregational or Presbyterian denomination. It is supported by tuition fees (from $25 to $30 a year), and the income of an endowment of $210,000. It has an astronomical observatory, valuable apparatus, and libraries containing 11,000 volumes. There is a preparatory and a collegiate department. Both sexes are admitted. In 1876—7, there were 11 instructors and 126 students (72 collegiate and 54 preparatory). The Cleveland Medical College, established in Cleveland in 1844, is a department of the institution. The presidents of the college have been as follows: the Rev. Charles B. Storrs, 1830—33; the Rev. George E. Pierce, D. D., 1834—55; the Rev. Henry L. Hitchcock, D. D., 1855—71; and the Rev. Carroll Cutler, D.D., since 1871.

WESTFIELD COLLEGE, at Westfield, Ill., under the control of the United Brethren in Christ, was chartered in 1865, growing out of the Westfield Seminary, founded in 1861. Both sexes are admitted and graduated on an equal basis of scholarship. It has an endowment of $85,000. The regular charge for tuition is $24 a year. There is a preparatory, a normal, a scientific, and a classical course. Facilities are also afforded for instruction in art and music. In 1876—7, there were 9 instructors and 193 students (34 collegiate). The Rev. Samuel B. Allen, D. D., has been the president since 1869.

WESTMINSTER COLLEGE, at Fulton, Mo., founded in 1853, is under the control of the Presbyterian Church, South. It is supported by tuition fees (from $30 to $50 a year) and the income of an endowment of $86,000. The libraries contain about 5,000 volumes. There is a classical and a scientific course (with a collegiate and a preparatory department), special courses, and an English course. In 1876—7, there were 6 professors and 99 students (classical, 43; scientific, 15; special, 15; English, 26). The presidents have been: the Rev. S. S. Laws, LL. D.; the Rev. John Montgomery, D. D.; the Rev. N. L. Rice, D. D.; and the Rev. M. M. Fisher, D. D., the present (1877) incumbent.

WESTMINSTER COLLEGE, at New Wilmington, Pa., chartered in 1852, is under United Presbyterian control. It has productive funds to the amount of $74,000, raised by the sale of scholarships, the owners or hirers of which are entitled to tuition. The libraries contain 3,600 volumes. There is a classical, a preparatory, and a scientific department. No distinction of color or sex is made in the admission of students. In 1875—6, there were 8 instructors and 165 students (71 classical, 48 preparatory, and 46 scientific). The presidents have been as follows: the Rev. James Patterson, D. D., 1853—66; the Rev. R. A. Browne, D. D., 1867—70; and the Rev. E. T. Jeffers, D. D., since 1872.

WEST POINT, the seat of the United States Military Academy, is a village in Orange Co., N.Y., on the W. bank of the Hudson river, at its passage through the Highlands, 52 m. above New York City. The grounds over which the United States has jurisdiction, and on which are the principal buildings, occupy the plain of West Point, 160 to 180 ft. above the river, and are flanked on the west by abrupt hills and mountain spurs from 500 to 1,500 ft. high. The point projects into the river with bold, rocky cliffs on the east and north-east, and a more gentle slope on the north. A large area is arranged for tactical instruction and parades. The academy was established at West Point by the act of March 16., 1802. Under the present law, each congressional district, each territory, and the District of Columbia is entitled to have one cadet at the academy, and ten are also appointed yearly at large. The appointments at large are conferred by the president; those from each district and territory, by the secretary of war, on the nomination of the representative or delegate in Congress. Candidates must be between 17 and 22 years of age, must be well versed in arithmetic, reading, and writing, including orthography, and must have a knowledge of the elements of English grammar, of descriptive geography, particularly of their own country, and of the history of the United States. Upon entering, they agree to serve eight years in the U. S. army, unless sooner discharged. Each cadet receives $540 a year, against which are charged his expenses, including board, clothing, books, and stationery. For the purposes of military police, discipline, and infantry drill, the cadets are organized into a battalion of four companies, commanded by an army officer, styled Commandant of Cadets, the battalion staff and the subordinate officers being cadets. Each company is commanded by anarmy officer, styled Assistant Instructor of Infantry Tactics. The course is for four years. From about June 20. to Sept. 1., a period corresponding to the vacation of other institutions, the cadets live in tents and devote themselves to military duties, riding, sword exercise, practical military engineering, etc. On graduation, they are commissioned in the engineers, ordnance, artillery, infantry, or cavalry, according to their qualifications. The academy is under the care of an army officer, styled Superintendent, who has a military staff of five officers. There are professors of drawing; of mathematics; of chemistry, mineralogy, and geology; of the Spanish language; of natural and experimental philosophy; of the French language; of military and civil engineering; of law; and of geography, history, and ethics (the chaplain). There are also instructors of artillery, cavalry, and infantry tactics (the commandant of cadets); of practical military engineering, signaling, and telegraphy; and of ordnance and gunnery; a music teacher, and a sword master. Most of these have several assistants. In 1877, there were 51 officers and 300 cadets. The number of graduates from 1802 to 1876 was 2,640, being less than half of those who entered the academy during that period.

WEST VIRGINIA, one of the states of the American Union, organized, in 1862, from a portion of Virginia, and admitted into the Union as a separate state in 1863. Its area is 23,000 sq. m.; and its population, in 1870, was 442,014, of whom 17,980 were colored persons.

Educational History.—The school history of the state is of course identical with that of Virginia (q. v.), up to the time of their separation. One of the conditions under which the state was admitted to the Union, provided for the creation of a school fund, for the organization of a free-school system, and the appointment of officers necessary for its proper supervision and maintenance. In 1865, this system was established, and remained in force till 1872, when the new constitution, then adopted, made several changes. In 1873, the legislature amended the school law, giving it its present form.—Since 1869, the state superintendents have been as follows: H. A. G. Ziegler, till February, 1870; A. D. Williams, till 1871; C. S. Lewis, till 1872; W. K. Pendleton, till 1873; B. W. Byrne, till 1877; and W. K. Pendleton, again elected in 1877.

School System.—The supervision and management of the state are entrusted to a *state superintendent*, who is elected by the people every four years. He is required to give directions to the county superintendents, and to perform all the duties usually pertaining to the office, making an annual report to the legislature.

County superintendents are elected for two years. The organization of the schools is committed to these officers, with power to exercise a general supervision over all subordinate officers. *District boards of education*, consisting of a president and two commissioners, are elected for two years. They have general control of the district schools in all that relates to the building and repairing of school-houses, the employment of teachers, the determination of their number and salaries, and the limiting of the school session. *District trustees* are elected for two years. They act under the direction of the district board. They employ teachers, and report annually to the board. *Boards of examiners*, each consisting of the county superintendent, and two teachers appointed by the president of the district board, are convened in every county for the purpose of examining teachers and issuing certificates, valid for one year in the county where issued. These are authorized to grant certificates of five grades. A *state board of examiners*, consisting of the state superintendent and two professional teachers appointed by the governor, also issues professional certificates, which entitle the holder to teach anywhere in the state during life, such certificates being revocable by the state superintendent for good cause. The school revenue of the state is derived from (1) the interest on the invested school fund; (2) a poll tax of $1 on all male citizens; (3) a state tax of 10 cents on every $100 of real and personal property; (4) a district tax for a school fund; and (5) a district tax for a building fund. The last two are subject to a majority vote of the people of the district. The county sheriff acts as treasurer of the school funds, collecting and disbursing "all school money for the several districts and independent districts therein." Mixed schools for white and colored children are prohibited; the establishment of separate schools for the latter being provided for, whenever the number in a district exceeds 25. The legal school age is from 6 to 21 years.

Educational Condition. — The number of school-districts, in 1874, was 321; the number of sub-districts, 2,845; the number of independent districts, 38.

The school revenue, in 1874—5, was:

From state tax	$194,791.32	
" local "	541,090.98	
Interest on permanent fund	17,595.20	
Total		$753,477.50

The expenditures were as follows:

For teachers' salaries	$541,358.83	
" sites, buildings, and furnit.	121,047.38	
" other expenses	52,754.38	
Total		$715,160.59

The principal items of *school statistics* are as follows:

No. of children of school age		179,897
" " " enrolled		115,300
Average daily attendance		79,002
Number of teachers, males	2,677	
" " " females	784	
Total		3,461
Average monthly salary of male teachers		$35.03
" " " " female "		$30.77

Normal Instruction. — The state normal school, known as Marshall College, at Huntington, was established in 1867. Five branches were subsequently authorized, and most of them were opened as follows: at Fairmont (1869); at West Liberty (1870); at Glenville (1873); at Shepherdstown (1873); and at Concord (to be opened in 1875). The number of graduates from the parent school at Huntington, up to 1874, was 34. The school at Fairmont is divided into a model school, and an academic and a normal department, and will accommodate 200 students. The school at West Liberty has accommodations for 150; that at Shepherdstown, for 200. The latter and the Glenville school are under the management of a board of regents. The appropriation from the Peabody fund for these five schools, in 1875, was $2,500.—*Teachers' Institutes* have been organized, principally by the agent of the Peabody fund; and their influence, in calling the attention of teachers to improved methods of teaching and school government, has been very beneficial. A *state teachers' association* is also in existence, which holds annual meetings. *Normal institutes*, of from 2 to 4 weeks' duration, were held, during 1874, in 15 counties.

Secondary Instruction.—The establishment of high schools is dependent upon a three-fifths vote of the citizens of each district. The number of these institutions is not large. The Harper's Ferry High School for colored pupils was, in 1868, chartered as Storer College, but the course of instruction hardly goes beyond that of the ordinary primary school. Many grammar schools exist, and the studies usually pursued in high schools are, to some extent, pursued in them. Besides these, there are several private schools and academies in which secondary instruction is given. Seven private schools of this grade reported to the U. S. Bureau of Education, in 1875, a total of 32 teachers and 873 pupils. Two of the colleges, also, have preparatory departments.

Denominational and Parochial Schools.—Several of these are in existence, principally under the auspices of the Roman Catholics, and the German Protestants. Five are reported in Wheeling alone,—3 Roman Catholic, and 2 German Protestant.

Superior Instruction.—Three institutions for education of this kind exist, as follows:

NAME	Location	When organized	Religious denomination
Bethany College	Bethany	1840	Christian
West Virginia College	Flemington	1868	Free W.B.
West Virginia Univ.	Morgantown	1867	Non-sec.

There are two colleges for women,—the Parkersburg Academy of the Visitation, and the Wheeling Female College. The former was established by the Roman Catholics, in 1866. Connected with it is a preparatory school in which instruction in common-school branches is given gratuitously. The academy is well supplied with apparatus and all the means for imparting a higher education. It had, in 1875, 12 instructors, in all the departments, and 80 students pursuing the college course. The Wheeling Female College provides a regular college course of 4 years, besides special courses. It was established in 1865, is non-sectarian, and has a corps of 13 instructors—4 male and 9 female—and 139 students in all the departments.

Professional and Scientific Instruction.—The agricultural department of the West Virginia University, at Morgantown, is the state institution for instruction in agriculture. It was endowed by Congress with land scrip to the value of $100,000, to which the citizens of Morgantown have added from time to time. It also receives an annual appropriation from the legislature. It has five departments: preparatory, literary, scientific, agricultural, and military. Optional courses are permitted. Nine regents constitute the board of management, and two cadets from each regent's district are entitled to gratuitous instruction. St. Vincent's College, at Wheeling, was established by the Roman Catholics, in 1865, for the purpose of affording instruction in theology. It is now temporarily suspended.

WEST VIRGINIA, University of, at Morgantown, W. Va., was founded in 1867. It has an endowment of $110,000, including the proceeds of the lands granted by Congress for the support of a state college of agriculture and the mechanic arts. It is supported by the income of the endowment, together with tuition fees and annual state appropriations. Four cadets from each judicial circuit of the state are educated free of cost for tuition, books, stationery, etc. Military drill is required of them. For others, the tuition and contingent fees vary from $21 to $30 a year. The institution has a library of 4,000 volumes. A United States signal station has been established at the university. The instruction is embraced in six departments: classical, scientific, agricultural, engineering, and military; and a preparatory department. The agricultural course is for two years; the other courses are for four years. In the military department, besides tactics, etc., the studies are those of the classical, scientific, or other department. In 1875—6, there were 11 instructors and 96 students (39 collegiate and 57 preparatory). The Rev. J. W. Scott, D. D., LL. D., is (1877) acting president.

WEST VIRGINIA COLLEGE, at Flemington, Taylor Co., W. Va., founded in 1868, is under the control of Free Will Baptists. It is supported by tuition fees, ranging from $24 to $40 a year. It has a preparatory, a commercial, an academic, a normal, a college preparatory, and a collegiate course. Both sexes are admitted. In 1876—7, there were 5 instructors and 75 students. The presidents have been the Rev. A. D. Williams, A. M., 1868—70, and the Rev. Wm. Colegrove, A. M., since 1870.

WHATELY, Richard, archbishop of Dublin, born in London, Feb. 1., 1787; died in Dublin, Oct. 8., 1863. He was educated at Oriel College, Oxford, was elected fellow in 1811, and became Bampton lecturer in 1822. In 1825, he was appointed principal of St. Alban's Hall, Oxford; in 1830, professor of political economy; and, in 1831, archbishop of Dublin. In the latter position, he was very energetic in all questions which affected the welfare of Ireland. He was one of the members of the board of national education, a position which he held till 1853, resigning it then because of a departure on the part of the board from the plan on which they had, up to that time, acted. His activity in all charitable enterprises, and his energy as an author, were very marked. His educational works are: *Elements of Logic* (1826); *Elements of Rhetoric* (1828); *Introductory Lectures to Political Economy* (1831); *English Synonyms* (1851); and *Introductory Lessons on Mind* (1859).

WHEATON COLLEGE, at Wheaton, Ill., was organized in 1858, and chartered in 1860. It was founded by Wesleyan Methodists, but is now under the control of Congregationalists. It has productive funds to the amount of $30,000; the buildings, grounds, and apparatus are valued at $100,000; and the libraries contain about 2,500 volumes. The cost of tuition is from $24 to $30 a year. There is a classical, and a *ladies' collegiate* course, preparatory courses, and an English course; instruction is also given in music, drawing, and painting, and commercial branches. In 1875—6, there were 17 instructors and 213 students. The Rev. Jonathan Blanchard is (1877) the president.

WHEWELL, William, an English philosopher and educator, born in Lancaster, May 24., 1794; died in Cambridge, March 5., 1866. He graduated at Trinity College in 1816, of which he became fellow, and, subsequently, tutor. In 1820, he was made a fellow of the Royal Society, and from 1828 to 1832, was professor of mineralogy in Cambridge. In 1841, he was appointed Master of Trinity; and, from 1838 to 1855, was professor of casuistry. In the latter year, upon his appointment as vice-chancellor of the University of Cambridge, he resigned his professorship. His great mental activity is shown by the constant accessions to his stock of knowledge, his varied attainments, and the amount of literary labor which he performed, in the shape of independent works, besides reviews, criticisms, and translations. To this activity, his uninterrupted good health contributed not a little. His educational works are: *Astronomy and General Physics* (1833); *Thoughts on the Study of Mathematics* (1835); *On the Principles of English University Education* (1837); *History of the Inductive Sciences* (1837); *Philosophy of the Inductive Sciences* (1840); *On Liberal Education* (1845—52); *Lectures on the History of Moral Philosophy in England* (1852); *Of the Plurality of Worlds* (1853); *The Platonic Dialogues for English Readers* (1859—61); and *Lectures on Political Economy* (1863).

WHITTIER COLLEGE AND NORMAL INSTITUTE, at Salem, Henry Co., Iowa, founded in 1867, is under the care of the

Society of Friends. It is open to both sexes, and is supported by tuition fees varying from $24 to $30 a year. It has a collegiate, a normal, and a business department. The course of study in the first and second years of the collegiate department is regarded as preparatory to the scientific course. The third year completes the scientific course, the ancient languages being elective. This course is soon to be increased, and arrangements are in progress to extend both courses so as to constitute a complete college curriculum. The classical course extends through the fourth year. In 1875—6, there were 5 instructors and 200 students in all the departments. Wm. Penn Clark is (1877) the president.

WICHERN, Johann Heinrich, a German philanthropist and educator, was born in Hamburg, in 1808. He studied theology, engaged actively in the different departments of benevolence connected with the home missionary work of the Evangelical Church, and especially interested himself in the care of poor children, and in the amelioration of the inmates of hospitals and prisons. He has founded a number of institutions, the most important of which is that called the Rauhes Haus (*das Rauhe Haus*), at Horn, near Hamburg, a house of refuge for homeless children, which is established upon peculiar and novel principles, and has already become the model upon which many other institutions of the kind have been organized. (See REFORM SCHOOLS.)

WILBERFORCE UNIVERSITY, near Xenia, O., founded in 1863, is under the control of the African Methodist Episcopal Church. It has a small endowment. The cost of tuition ranges from $4.75 to $6.75 per term of 14 weeks. The library contains 4,000 volumes. The institution is especially designed for the education of colored youth of both sexes. It embraces a preparatory, a normal, a collegiate (classical, and scientific), a theological, and a law department. In 1875—6, there were 12 instructors and 138 students (96 preparatory, 5 normal, 6 collegiate, and 36 theological). The Rt. Rev. Daniel A. Payne, D.D., is (1877) the president.

WILEY UNIVERSITY, at Marshall, Tex., was established, in 1873, by the Freedmen's Aid Society of the Methodist Episcopal Church, for the especial benefit of colored youth of both sexes, though open to all without regard to race and color. It is supported by the Society. Tuition is free. There are the following courses: primary, 2 years; intermediate, 2 years; academic and normal, 2 years; preparatory, 2 years; collegiate, 4 years; theological, 3 years. In 1875—6, there were 4 instructors and 248 students. The presidents have been the Rev. Francis C. Moore, 1873—5, and the Rev. Wm. H. Davis, since 1875.

WILLARD, Emma, a celebrated American educator, born in Berlin, Ct., in 1787; died in Troy, N.Y., in 1870. After many struggles to obtain a liberal education, she commenced to teach at the age of 17; and her fitness for that vocation was so marked that, at the age of 20, she received many invitations to take the charge of schools, finally occupying the principalship of a female seminary at Middlebury, Vt. After her marriage, she withdrew from the school room for a time; but, in 1814, she resumed her vocation by opening a boarding-school at Middlebury. Subsequently, she removed her school to Waterford, N. Y., having presented to Gov. De Witt Clinton a plan for the higher education of women in that state. In 1821, her school was removed to Troy, assuming the title of the Troy Female Seminary; and Mrs. Willard continued in its charge till 1838. Her active interest in education was, however, never relaxed. In 1840, she took the supervision of the schools at Kensington, Ct.; and, in 1854, she attended the World's Educational Convention in London, and afterward visited the schools of Germany, Switzerland, France, and other countries. Mrs. Willard's improvements in text-books were numerous and valuable. In geography, she separated what is to be learned into two parts,—that which can be learned through the eye, *i. e.*, from the map, and that which is to be learned from the text. The latter she treated comparatively, the length of rivers, for instance, of one country being studied in connection with the same feature in other countries; then the size of continents, islands, height of mountains, etc., in the same way. She also invented a peculiar kind of time map to assist in the study of history. The place which Mrs. Willard will occupy in the annals of education in America, must always be a prominent one, not only from the fact that almost the whole of her long life was spent in its service, and that the improved methods she originated have become recognized necessities, but because she was the first to lift up her voice against the exclusion of her sex from a participation in the advantages of a higher education, and for a long time, by voice and pen, was their earnest, and almost exclusive advocate. Very largely to her, and to her school, standing as an evidence of the feasibility of her demands, is the cause of female education indebted, for the victory it has won over moss-grown prejudice and error. How great that prejudice was, let the record of her first triumphs attest, when we are told that the examination of her first female pupil in geometry caused "a wonderful excitement," many declaring that no woman ever did, or could, understand geometry. Mrs. Willard's publications are quite numerous, including: *A Plan for Improving Female Education* (1819); *The Woodbridge and Willard Geographies and Atlases* (1822); *History of the United States* (1828); *Universal History in Perspective* (1837); *Temple of Time* (1844); *Last Leaves of American History* (1849); *Morals for the Young* (1857), besides numerous addresses, pamphlets, letters, and poems.

WILLIAM AND MARY, College of, at Williamsburg, Va., next to Harvard, the oldest college in the United States, was formerly under Protestant Episcopal control, but at present is not connected with any religious denomination. In 1660—61, the colonial assembly passed an act for the establishment and endowment of a college; and, in 1693, a royal charter was granted, the name being derived from the reigning king and queen. This was the only college charter given in the colonies by any of the English monarchs. The first commencement exercises were held in 1700. In 1776, it was the wealthiest college in the colonies; but the Revolution deprived it of its chief endowments. In 1781, the exercises were suspended, and the buildings were alternately occupied, before and during the memorable siege of Yorktown, by the British and the French and American troops. While in possession of the latter, the college building was injured, and the president's house was destroyed by fire. The latter was afterward rebuilt at the expense of the French government. The college was, probably, not closed more than a year. Early in May, 1861, the existence of war at its threshold rendered it necessary to suspend the college exercises, and to close its doors. The college was reopened at the close of the war; but the building was not restored, nor the faculty fully re-organized, till 1869. The college is situated just outside of the city limits. It has an endowment of about $60,000, good chemical and philosophical apparatus, and a library of 5,000 volumes. The cost of tuition is $40 a year. For meritorious young men in limited circumstances, fifteen scholarships, exempting those admitted on them from the payment of tuition fees, have been founded. In addition to the above, each professor has the power to confer, as a reward of merit, a scholarship on two students, selected annually. The instruction is comprised in eight departments: Latin; Greek; mathematics; French; German; natural philosophy and mixed mathematics; chemistry, geology, mineralogy; and physiology; moral and intellectual philosophy and belles-lettres. There is also a preparatory department. In 1875—6, there were 7 instructors and 86 students (71 collegiate and 15 preparatory). Thomas Jefferson, James Monroe, John Tyler, Chief Justice Marshall, Peyton Randolph, the president of the first American Congress, John Randolph of Roanoke, and Winfield Scott were graduates of this college. The Visitors and Governors are the general governing body of the college; and these choose one of their number rector. The faculty, which is the corporation, appoints some suitable person chancellor, who is the titular head of the institution. The internal management is in the hands of the president and faculty. Until 1776, the chancellors of the college were the bishops of London, excepting in 1764, when the office was conferred on the earl of Hardwicke. George Washington was chancellor from 1788 to 1799, and ex-president John Tyler from 1859 to 1862. During the intervening periods, the office was not filled. The present chancellor (1877). Hugh Blair Grigsby, LL. D., was elected in 1871. The presidents have been as follows: the Rev. James Blair, D. D., 1693—1743; the Rev. William Dawson, 1743—52; the Rev. William Stith, 1752—5; the Rev. Thomas Dawson, 1755—61; the Rev. William Yates, 1761—4; the Rev. James Horrocks, 1764—71; the Rev. John Camm, 1771—7; the Rt. Rev. James Madison, 1777—1812; the Rev. John Bracken, 1812—13; Dr. John Augustine Smith, 1814—26; the Rev. Wm. H. Wilmer, D. D., 1826—7; the Rev. Adam P. Empie, D. D., 1827—36; Thomas R. Dew, 1836—46; Robert Saunders, 1847—8; Benjamin S. Ewell, 1848—9; the Rt. Rev. John Johns, 1849—54; and Benjamin S. Ewell, LL. D., since 1854.

WILLIAM JEWELL COLLEGE, at Liberty, Mo., founded in 1849, is under Baptist control. It is supported by tuition fees (from $30 to $40 a year) and the income of an endowment of $100,000. It has a library of 3,500 volumes. The college has a preparatory and a collegiate department, and embraces eight schools: Latin, Greek, mathematics and astronomy, modern languages, English and history, natural science, moral philosophy, and theology. In 1875—6, there were 6 instructors and 137 students, of whom 46 were connected with the school of theology. The presidents have been as follows: E. S. Dulin, D. D., LL. D.; the Rev. R. S. Thomas, A. M.; Wm. Thompson, LL. D.; Thomas Rambaut, D. D., LL. D.; and W. R. Rothwell, D. D., the present incumbent (1877).

WILLIAMS COLLEGE, at Williamstown, Mass., owes its origin to the will (1755) of Col. Ephraim Williams. The property bequeathed was allowed to accumulate till 1785, when a free school was incorporated, which was opened in 1791. A college charter was obtained in 1793, and the first commencement was held in 1795. The institution is under Congregational control. Its productive funds exceed $300,000, and its funds for the aid of needy students amount to $90,000. It has a large cabinet of natural history, chemical, physical, and astronomical apparatus, and a library of 17,000 volumes, besides the society libraries. The cost of tuition is $75 a year. It adheres strictly to the old college curriculum. In 1875—6, there were 13 instructors and 170 students. The presidents have been as follows: the Rev. Ebenezer Fitch, 1793—1815; the Rev. Zephaniah Swift Moore, 1815—21; the Rev. Edward Dorr Griffin, 1821—36; the Rev. Mark Hopkins, D. D., LL. D., 1836—72; and the Hon. Paul Ansel Chadbourne, D. D., LL. D., since 1872.

WILMINGTON COLLEGE, at Wilmington, Ohio, under the control of the Society of Friends, was organized in 1870, and chartered in 1875. Both sexes are admitted. It has a small endowment, being supported chiefly by tuition fees ($39 a year). There is a preparatory and a collegiate department, with a classical and a scientific course. In 1875—6, there were 4 instructors and 90 students (19 collegiate and 71 preparatory). The presidents have been Lewis A. Estes, 1870—74, and Benjamin Trueblood, since 1874.

WISCONSIN, one of the western states of the American Union, originally a part of the territory of the same name, which was formed in 1836, of lands previously embraced in the territory of Michigan. It was admitted into the Union as a state in 1848; but, the following year, its limits were changed by transferring a portion of it to the territory of Minnesota. The area of the state is 53,924 sq. m.; and its population, in 1870, was 1,064,985, of whom 2,113 were colored persons, and 11,521, Indians.

Educational History.—The earliest schools held in the state, are believed to have been conducted by the French Jesuits; but the school at Green Bay, of which James Porlier was teacher, in 1791, is the first of which there is any definite information. Post schools, also, were established, in the early part of this century, near the forts of the United States, at which instruction was given to the children of officers, soldiers, and settlers. Usually, they were conducted by the post chaplains; but one of the earliest mentioned —that at Prairie du Chien—was taught by a sergeant of the garrison. A few years after, Indian schools were opened by religious denominations; and, in 1832, a clause of the treaty concluded between the Winnebago Indians and the United States, stipulated that the latter should maintain for 27 years a school near Prairie du Chien, for the education of such children as the tribe might send to it. In 1830, the first schoolhouse in the lead district was built at Mineral Point. This was followed by others; but they were not numerous, the attention of the inhabitants being, in great measure, absorbed by their occupation as miners. The principal impulse given to the founding of schools, came from the settlers from the eastern states, who sought the territory after the financial distress of 1837. The first organized action taken by the territory in regard to schools, was in 1836, when a bill was introduced into the assembly, "to prohibit persons from trespassing on the school lands." This was followed, shortly after, by another, to "regulate the sale of school lands, and to provide for organizing, regulating, and perfecting common schools." In 1839, this law was revised, so that every town of not less than ten families was constituted a school-district, and was required to provide a teacher. County commissioners were authorized to appoint inspectors in towns which refused or neglected to choose them, the duties of these inspectors being to lease the school lands, take charge of the school-houses, and make reports to the county commissioners of the number of pupils. Trustees might be elected in each district, to perform the duties ordinarily assigned to the inspectors. A tax of one-fourth per cent also was authorized to be raised for the building of school-houses and the maintenance of the schools. In 1840 and 1841, the school laws were amended. The office of town commissioner was restored, superseding that of inspector; five officers,—a clerk, a collector, and three trustees, were chosen in each district; and taxes were assessed in each for the building of school-houses. By this time, the interest of the people in the subject of schools had become very general. In 1845, a free school—the first in the state—was founded at Kenosha, by Col. M. Frank. The idea—since so familiar in the older states—of taxing all assessed property for the support of common schools, was then new, and met with strenuous opposition on the part of property holders who had no children to educate. After many public meetings and lectures, devised for the purpose of enlightening the public mind on the subject, a bill embodying this idea was introduced by Col. Frank into the territorial legislature, and passed in 1845. In the constitutional convention held in 1846, for the purpose of forming a constitution for the prospective state, and again in the convention of 1848, the subject of education created much discussion. In 1849, three commissioners were appointed to revise the school laws, and reduce them to one system uniform in its action throughout the state. The earliest school fund was derived from the sale of lands granted by the general government for school purposes. These were the sixteenth section in every township, any grant the purposes of which had not been specified by the general government, and the 500,000 acres granted by the act of 1841. This was further increased, in 1856, by the addition of three-fourths of the proceeds of the swamp lands granted to the state by act of Congress in 1850. This, however, was subsequently diverted to the normal-school and drainage fund. The school fund was also increased in other ways, till, in 1875, the total income from it amounted to $184,624.64. The first state superintendent was Eleazer Root (1849—52); and his successors were Azel P. Ladd (1852—4); H. A. Wright (1854—5); A. C. Barry (1855—8); Lyman C. Draper (1858—60); J. L. Pickard (1860—64); J. G. McMynn (1864—8); A. J. Craig (1868—70); Samuel Fallows (1870—74); Edward Searing, since 1874.

School System.—The general supervision of educational interests is vested by the constitution in a *state superintendent*, who is elected biennially. In addition to the duties usually devolving upon state superintendents, he is intrusted with some that are ordinarily delegated to state boards of education. He is, also, a member, *ex officio*, of the board of regents of the state university and of the normal school. *County superintendents* are chosen biennially. They have an oversight over school property, inspect the schools, conduct teachers' institutes, examine teachers, and grant certificates of three grades. In 1875, the law was so amended as to open the office of county superintendent to women, and several have since been elected. An independent system of supervision and management exists in the cities, by which *city superintendents* are appointed, with powers and duties similar, in most respects, to those of county superintendents. *Boards of education* are elected in the cities, which, for school purposes, have been erected into independent districts by charters from the legislature. These boards choose a president, a clerk, and a superintendent, establish schools, and adopt rules for their management. The superintendent examines and licenses teachers, visits the schools, and makes an annual report. The schools are supported by the income of the state school fund, and by a tax levied in each county to the amount of one-half of that received from the state for school purposes. Special school taxes, also, may be authorized by the county boards of supervisors. No sectarian instruction is permitted in the schools. Five months constitute the legal school year; and 20 days, the school month. The school age is from 4 to 20 years.

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The principal items of *school statistics* are as follows:

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WITTENBERG COLLEGE, at Springfield, Ohio, founded in 1845, is under the control of the English Evangelical Lutheran Church, as represented by the General Synod. It is supported by tuition fees ($30 a year) and the income of an endowment of $125,000. Its libraries contain 8,000 volumes. There is a theological, and a collegiate (classical and civil engineering) course, and a preparatory department. In 1875—6, there were 10 instructors and 164 students (18 theological, 80 collegiate, and 66 preparatory). Both sexes are admitted. The presidents have been as follows: the Rev. Ezra Keller, D. D., 4 years; the Rev. Samuel Sprecher, D. D., LL. D., 25 years; and the Rev. J. B. Helwig, D. D., the present incumbent, 3 years.

WOFFORD COLLEGE, at Spartanburg, S. C., chartered in 1851 and opened in 1854, is under the control of the Methodist Episcopal Church South. It owes its origin to the will of the Rev. Benjamin Wofford, who bequeathed $100,000 to found it. It is supported by the income of an endowment of $50,000, by tuition fees (from $44 to $64 a year), and by assessments on the Methodists of the state. Its libraries contain 15,000 volumes. In 1875—6, there were 7 instructors and 125 students (95 collegiate and 30 preparatory). The presidents have been as follows: the Rev. W. M. Wightman, D. D., 1854—60; the Rev. A. M. Shipp, D. D., 1860—75; and James H. Carlisle, A. M., LL. D., since 1875.

WOMEN, The Higher Education of (in Great Britain). This subject has already been treated in the articles on *Co-Education* and *Female Education*, in which the progress of the recent movement in favor of the higher education of women in the United States, is treated with considerable fullness. The movement in Great Britain has some peculiar features which it is the special design of this article to describe.

England.—The numerous educational advantages offered to women are the results of a remarkable and spontaneous movement, which has had a rapid growth. It commenced about the year 1863, when, at the request of an influential committee, the Cambridge University Senate permitted an experimental examination for girls in connection with the junior and senior local examination for boys. The results, if contrasted with those of the entrance examination for Bristol College, in 1876, will show the improvement in the education of women, during 13 years. In 1863, half the juniors passed, but 35 out of 41 seniors failed in preliminary arithmetic; at the Bristol examination for scholarships, in 1876, the women took two out of three open scholarships, in addition to the four specially appropriated to them. In 1864, a government Schools Inquiry Commission was appointed, "to inquire into the state of education of boys and girls of the upper and middle classes." The report on private, endowed, and proprietary schools was published in 1868, in 20 volumes, of which only one-twentieth referred to girls. The inspectors appointed by the commission had visited *private* schools for girls, by the courtesy of the owners. They reported even the best as too small in numbers, and the teaching as wanting in thoroughness, arithmetic and other mathematics, and Latin, being mostly neglected, and French and German taught superficially.—*Endowed* schools were reported as few; principally orphanages, and with instruction scarcely raised above the elementary, "the endowments bearing an infinitesimal proportion to similar endowments for boys."—Under the head of *Proprietary Schools* were included Cheltenham School, Queen's College, Bedford College, Miss Buss's North London Collegiate School, and two schools at Liverpool. In these, the teaching was commended. Several ladies—amongst them Miss Buss, Miss Davies, and Miss Beale—were examined by the commissioners, and confirmed the unfavorable verdict of the inspectors on the general state of girls' education. They advised the establishment of public schools for girls, and the opening of university examinations to girls and women. On the publication of the report, various efforts were commenced to secure endowments for girls' schools. In 1871, Miss Buss made her North London School a public school. She placed it in the hands of trustees, and opened a second-grade school under the same trust. In 1875, these schools received an endowment of £16,000 for buildings, from the Brewers' Company, and became endowed schools; and, in 1876, the number of pupils was 800; 400 in each school. Several scholarships are held in the schools. In the above-mentioned year (1871), the Women's Education Union was formed, at the suggestion of Mrs. W. Grey; and this Union, in 1872, started a company, called The Girls' Public Day School Company Limited, with a capital of £12,000 (since increased to £50,000), in £5 shares, "to provide schools at a moderate cost for girls of all grades above the elementary."—In framing a school scheme, the council of the company were aided by schemes already published, although not enforced until later by the Endowed Schools' Commission, appointed after the inquiry, and by the scheme for Miss Buss's school. The Company's first schools were opened in 1873, at Chelsea and at Notting Hill; and since then, 8 additional high schools have been opened.—at Croydon, Norwich, Hackney, Bath, Nottingham, Oxford, St. John's Wood, and Gateshead; and one middle school, at Clapham. In 1876, there were upward of 1,400 children in attendance. Every school is placed under the charge of a head-mistress. There are examinations by independent examiners, and a fair proportion of girls have passed in the Oxford and Cambridge local and higher local examinations; one, from Notting Hill, has obtained a scholarship at Newnham Hall.—The school buildings, with one or two exceptions, are arranged to hold from 200 to 300 girls; the numbers, therefore, will probably increase, and it is expected that the company will be successful, financially as well as educationally. Companies have also been formed at Leeds, Manchester, Plymouth, Devonport, and Grantham, for the establishment of high schools. Simultaneously with the improved provision for the education of girls, colleges have been opened for women, and lectures established throughout the country, by voluntary effort. In 1868, contributions were solicited for the establishment of a college for women, "designed to hold to girls' schools and home teaching, a position analogous to that occupied by the universities toward public schools for boys." A temporary building was opened at Hitchin, in 1869, with 6 students. The regulations of the University of Cambridge were enforced upon the students, and professors came from Cambridge to give class teaching. In 1870, five students were, on application, examined informally for the previous examination; but, since then, through the kind permission of the senate, and the courtesy of the examiners, many of the students have been examined, some in the classical, mathematical, and moral science *triposes;* seven have taken honors, and three have passed the examination for the ordinary B. A. degree.—In 1873, the college was removed to Girton, near Cambridge, to premises built at a cost of £16,000, and since then enlarged at a further cost of £6,000. In 1876, there were 33 resident students. Scholarships have been held amounting to £2,385, and £600 additional will be given in 1877.—In 1871, Miss Clough opened a house at Cambridge for students attending the lectures of the Association for the Higher Education of Women, or certain university lectures open to women. The accommodation soon became insufficient; and, in 1874, Newnham Hall, Cambridge, was built by a company to receive Miss Clough's students. In 1876, there were 29 students (some holding scholarships), all studying for the Cambridge higher local examinations.—In previous years, students have been examined informally in the papers of the mathematical, classical, and moral science *triposes.*—(For University College, London, see UNIVERSITY COLLEGE.) University College, Bristol, was opened in 1876, with 300 students, about one-half women, and was intended to supply, to persons of both sexes, advanced instruction in science, languages, history, and literature.—In the College of Physical Science, Newcastle-upon-Tyne, all classes are open to women.—The London School of Medicine for Women opened, in 1874, with 23 students. The classes on medical subjects were arranged for a 3 years' curriculum. One additional year of practical work is required. Societies have been formed throughout the country, since about 1864, for the establishment of lectures and classes for women; but the necessity for separate organization will probably be superseded by the scheme for university extension adopted by the Cambridge senate, in 1874, at the suggestion of Mrs. James Stuart.—By means of this scheme, university graduates are sent to the various country towns, to give lectures and form classes, open to both men and women, and to hold examinations and grant certificates. The scheme commenced at Nottingham, with 2000 students, and has rapidly extended. Colleges will be built, in connection with it, at Nottingham and Sheffield.—In London, lectures are open to women at the Science and Art Department, South Kensington, the Birkbeck Institution, etc. Instruction in music, with numerous scholarships, is given at the National Training School, South Kensington, opened in 1876.—The following examinations have been arranged: university examinations open to girls and women, in 1876—for girls under 18; local examinations of the universities of Cambridge, Oxford, and Durham—for women over 18; higher local examinations, Cambridge; examinations for women, at the University of London, and at Oxford (commenced in 1877); and government examinations in science and art, Science and Art Department. The University of London, in 1877, decided to admit women to medical degrees.

Scotland.—The education of women has long been on a higher level in Scotland than in England; girls have received some higher education with boys, in the common schools of the country; and they have also attended high schools with boys, in towns, and special girls' classes in the large cities. Therefore, the same urgent need for reform has not existed, as in England; yet two important improvements may be named. By act of parliament, in 1870, the rich endowments of the Edinburgh Merchants Company, of the annual value of £20,800, were appropriated to the education of boys and girls, and three large girls' schools were opened. Also a complete course of study for women has been established by the Ladies' Educational Association in Edinburgh, assisted by the professors of the university.—Examinations for girls and women are held in connection with the University of Edinburgh.

Ireland.—See IRELAND.

For further information on this subject, see *Report of Schools' Inquiry Commission;* the same abridged by D. Beale; HODGSON, *Education of Girls*; *Year-Book of Women's Work;* Journals and Pamphlets published by the Women's Education Union (London). (See also CO-EDUCATION OF THE SEXES, and FEMALE EDUCATION.)

WOODBRIDGE, William Channing, an American teacher and educational writer, born in Medford, Mass., Dec. 18., 1794; died in Boston, November, 1845. He graduated at Yale College at the age of 17, and from 1812 to 1814 was principal of the Burlington Academy in New Jersey, and subsequently studied theology at the theological seminary in Princeton, N. J. While at the latter place, he received an invitation to assist in the establishment of the American Asylum for the Deaf and Dumb, at Hartford, which he accepted. His labors there seriously affected his health, and made a voyage to the south of Europe desirable. This was undertaken in 1820. He returned in 1821; and, in the beginning of 1822, finished his *Rudiments of Geography*. This was followed, in 1824, by *Universal Geography*. (See GEOGRAPHY.) Shortly after, failing health again led to his relinquishment of active work, and to a second voyage to Europe. There he visited many educational institutions, giving particular attention to that of Fellenberg, at Hofwyl, where he spent three months, giving the first description of it to the American public. (See HOFWYL.) In 1829, he returned to Hartford for the purpose of enlisting the sympathies of influential friends in a plan for the general improvement of education in the United States, and the establishment of a school for teachers. Ill health, however, and the labor required for the revision of his geographical text-books, prevented the realization of his hopes. In 1831, he purchased the *American Journal of Education*, changed its name to the *Annals of Education*, and became its editor. He conducted this journal over six years, until sickness compelled him to resign the editorship, when he embarked again for Europe, but returned in 1844. As an earnest friend of the cause of education, Mr. Woodbridge is entitled to special mention. He was one of the first to recognize the necessity of normal schools; and the introduction of vocal music as a part of elementary instruction, is, in great measure, due to his zealous advocacy. (See MASON, LOWELL.)

WOODSTOCK COLLEGE, at Woodstock, Baltimore Co., Md., was chartered in 1867. It is a Roman Catholic institution, devoted exclusively to the younger members of the Society of Jesus. Its course of studies embraces three years of philosophy, and four years of theology, together with the accompanying branches of the natural sciences. Its faculty numbers 3 professors of dogmatic theology, 2 of special metaphysics, and one each for the remaining chairs of moral theology, Sacred Scriptures, ecclesiastical history, Hebrew, general metaphysics, chemistry, mathematics, and natural philosophy. During the scholastic year 1873—4, the number of students in regular attendance was 102, of whom 42 were engaged in the study of philosophy, and 60 in the course of theology. The Rev. James Perron, S. J., is (1877) the president.

WOOLSEY, Theodore Dwight, an American scholar and educator, born in New York, Oct. 31., 1801. He graduated at Yale College in 1820, and from 1823 to 1825, was a tutor there. From 1827 to 1830, he studied in Germany, and on his return was appointed professor of Greek in Yale College, and, in 1846, was chosen president, which office he resigned in 1871. He has published valuable editions of several classical authors, among which may be particularly mentioned *The Alcestis of Euripides* (1833); *The Antigone of Sophocles* (1835); *The Electra of Sophocles* (1837); *The Prometheus of Æschylus* (1837); and the *Gorgias of Plato*.

WOOSTER, University of, at Wooster, Ohio, founded in 1866, and opened in 1870, is under Presbyterian control. It is supported by tuition fees ($30 to $45 a year) and the income of an endowment of $250,000. A handsome building, costing over $100,000, has been erected, and contains, besides ample recitation rooms, a large cabinet and museum, a valuable telescope with many philosophical and chemical instruments, a chapel, and halls for literary societies. It has a library of about 4,000 volumes. Both sexes are admitted. There is a collegiate, a preparatory, and a medical department, the last at Cleveland. The collegiate department has three regular courses: classical, philosophical, and scientific. In 1875—6, there were 28 instructors (13 in the medical department) and 350 students (170 collegiate, 100 preparatory, and 80 medical). The presidents have been: the Rev. Willis Lord, D. D., LL. D., 1870—73, and the Rev. A. A. E. Taylor, D. D., since 1873.

WORCESTER, Joseph Emerson, an American lexicographer, born at Bedford, Aug. 24., 1784; died at Cambridge, Mass., Oct. 29., 1865. After graduating at Yale College, in 1811, he taught school for several years at Salem, and while there, prepared the greater part of his *Geographical Dictionary, or Universal Gazetteer* (2 vols., Andover, 1817). This work was followed by a *Gazetteer of the United States* (1818), *Epitome of History* (1827), and several other works. His first contributions to the lexical literature of the English language were an edition of *Johnson's English Dictionary, as improved by Todd and abridged by Chalmers, with Walker's Pronouncing Dictionary combined* (1827), and an abridgment of Webster's *American Dictionary*. His *Pronouncing and Explanatory Dictionary* appeared in 1830; the *Universal and Critical Dictionary*, in 1846; the *Pronouncing and Synonymous Dictionary*, in 1855; and his great *Dictionary of the English Language* (4to, Boston), in 1860.

WORD METHOD, a term applied to the analytic method of teaching children to read. The process consists in using short words instead of letters in the first lessons, the pupil learning to recognize and pronounce these words, sometimes to read easy sentences, before learning the names of the letters. When a sufficient number of words have been learned, the pupil is shown their composite character, and taught the names and sounds of the letters which form them, thus learning the alphabet. In this process, care should be taken to select appropriate words, and present them in a progressive manner; as, *cat, rat, hat, mat, — man, fan, can, — dog, log,* etc. The pupil, in this way, perceives the power of each letter, and soon learns to spell and pronounce words, after which the synthetic method may be employed.

WORDS, Analysis of. The analysis or resolving of words into their elementary parts, is an important branch of the study of languages, the native as well as foreign. In ordinary school parlance, this branch is usually styled *etymology*, since the analysis comprehends not only an explanation of the meaning of each of the parts of a word—both root and affixes, but a knowledge of the derivation of these. For elementary school purposes, however, it should be borne in mind that the latter is of secondary importance. In the study of the native tongue, it will be acknowledged, the importance of training pupils to analyze compound and derivative words can hardly be overestimated. The fact that the English language derives about one-half of the words in ordinary use from Latin, renders exercises in word analysis, of far greater necessity for the study of English, than for that of most other languages. That, without being trained in this analysis, pupils will scarcely be able to grasp the true meaning of English words, probably no experienced teacher, at present, will be inclined to dispute. To very many of the pupils who are merely drilled in spelling and reading, the force even of the most common Anglo-Saxon prefixes, like *a, be, en,* etc., and of suffixes, like *dom, hood, ship,* etc., must remain unknown. How many, for example, will be able to infer the meaning of *for* or *fore* in *forswear* and *forego?* The knowledge of the Latin prefixes and suffixes, even in the words of ordinary life, will be acquired with still greater difficulty by pupils not sufficiently trained in word analysis. On the other hand, only a slight knowledge of the simplest Latin prefixes, as, *ad, con, pre, pro, sub,* etc., affords a key to the distinctive meaning of a large number of words. It is, therefore, a matter of gratification to find that, at present, this branch of study is scarcely ever entirely omitted from the common-school course of instruction.—In regard to the method of teaching word analysis, it may justly be said that there are few subjects taught in elementary schools to which the fundamental principles of the developing method can so easily, and with so much advantage, be applied as to this. At whatever stage of the pupil's progress the instruction may begin, provided a knowledge of reading and writing has been acquired, the number of words already learned, will be found ample for the first and easiest exercises. Hardly any arbitrary memorizing is needed, since, if the teacher follow a natural course, he will only have to develop the knowledge already in the child's mind. Thus, children, even in the lowest grades, knowing the meaning of words like *teacher* and *preacher*, will not find the least difficulty in understanding that *er*, in both these words, means *one who*, and in perceiving that these words mean, respectively, *one who teaches*, and *one who preaches*. Nine-tenths of a class of pupils, of ordinary intelligence, will now readily find, among the words they are accustomed to use, several others in which the suffix *er* has the same meaning. They will not only fully comprehend this initiatory lesson, but they will feel a manifest delight that one simple explanation has so greatly added to their knowledge of the meaning of words. The intelligent teacher will not fail to perceive that the more closely he is able to accommodate his teaching to the knowledge of the words which belong to the pupils' own vocabulary, the more rapid will be their progress, and the more intense will be the interest which they will take in the new study. It is obviously a point of great importance that the first examples of prefixes or suffixes that are presented, should fully illustrate their general meaning. Thus, the word *teacher* would be a better selection for this purpose than *grocer; sailor*, better than *tailor;* and *repay*, better than *receive*. In the further progress of the study, it is important that the most common prefixes and suffixes should be learned before those of rarer use. It shows a great lack of pedagogical tact in a teacher to drill his pupils on *preter, subter,* and *retro,* before they know the meaning of *sub, con,* and *in*. A more difficult stage of this branch of study, is that which treats of the Latin roots, and their use in English words. Here, also, a strict adherence to the principle that we should proceed from the "known to the unknown"—from an analysis of what is already in the pupil's mind to that which is new, will guide the teacher with unerring certainty on the right path. For example, a judicious teacher who desires to familiarize his pupils with the derivatives from the Latin root *duc* or *duct* (from *duco*), will not, at first, select such words as *induct, inductive, superinduce,* etc., or even words like *adduce, conduce, deduce,* before his pupils have learned to analyze words of a more obvious meaning; as *introduce, produce, reduce, aqueduct, viaduct,* etc. What is here meant is, that the first lessons in this kind of analysis should concern only those words the meaning of which may readily be explained by showing the meaning of their parts. In every subject of instruction, the order of presenting the various matters which are to be learned by the pupil, is of vital importance; but in none is it more essential than in the etymological analysis of words. The numerous class of words which cannot be explained, except by the history of their formation (such as *ambition, candidate, chancellor, peculiar;* also *sycophant, gazette, quarantine,* etc.) should be reserved for a higher grade of this study.—The analysis of words derived from the Greek, should follow that of words derived from Latin roots; and the discussion of the etymological affinity of the words of different languages should be reserved for that stage of the course of studies which comprehends comparative philology.—For the teaching of this subject, important hints may be derived from the following works: TRENCH, *A Select Glossary of English Words etc.* (N. Y., 1859); also, *On the Study of Words* (N. Y., 1859); HALDEMAN, *Affixes in their Origin and Application* (Phila., 1865); DE VERE, *Studies in English* (N. Y., 1867). (For other works on this subject, see ENGLISH, THE STUDY OF.)

WORKING MEN'S COLLEGE (London), founded in 1854, resembles, in intention and organization, the Birkbeck Institution, founded in 1823. The Rev. F. D. Maurice was its principal up to the time of his death, in 1872. After a short interval, Thomas Hughes, author of *Tom Brown's School Days*, became, and still is, the principal. It provides instruction, at the smallest possible cost (the teaching being almost wholly unpaid), in the subjects with which it most concerns English citizens to be acquainted, and thus tries to place a liberal education within the reach of working men. The college is situated in Great Ormond Street, London. Six class rooms have recently been built, at a cost of more than £2,400. There is a museum and library; and a coffee and conversation room is also provided. Classes are formed in art, history, language and literature, mathematics, and physical science. These compose the chief work of the college; but classes in singing and other subordinate subjects are also formed.

The college year commences about the beginning of October, and consists of four terms of eight or nine week each, and a vacation term of eight to ten weeks.—The ordinary classes meet for one or two hours a week. General lectures are delivered on the ordinary subjects of the college on Saturday evenings, to which the public are admitted. There are also practice classes for supplementary tuition, conducted for the most part by certificated students.—Other advantages connected with the college, are a Natural History Society and Field Club, which holds weekly meetings, and arranges geological and botanical excursions; an adult school, under the special superintendence of the secretary, for teaching the subjects required for entrance to the college; and a night school, held twice a week, for boys under 17.—The fees are as low as possible, and the conditions of entry are, that students must be above 17 years of age, must know the first four rules of arithmetic, and must be able to read and write.—Examinations are held in the last week of December. Certificates of honor, and scholarships or associateships are granted to successful candidates who have attended the requisite number of terms. The council of the college is composed of founders, teachers, and elected members, among whom are many who originally joined it as students. The average number of students is 360. At an early date, the college was affiliated to the London University, and some of the students have taken their degrees. As the scheme of the Working Men's College did not admit women, another institution of a similar kind was founded in 1864; and another Working Men's College was organized in 1868.

WRITING. See PENMANSHIP.

WURTEMBERG. See GERMANY.

WYOMING, one of the territories of the United States, formed, in 1868, from portions of Utah, Idaho, and Dakota. Its area is 97,883 sq. m.; and its population, in 1870, was 9,118; but in 1875, it was estimated at 24,000.

Educational History.—In 1869, an act was passed by the territorial legislature, which provided for the organization of schools, and this was amended in 1870. At that time, the number of schools of all kinds was 9, giving employment to 15 teachers, and instruction to 364 pupils. In 1873, all previous school laws were repealed, and a new law was substituted, under which the schools are at present organized. The first superintendent of public instruction was J. H. Hayford, who became such in 1869, by virtue of his position as territorial auditor. He was succeeded, under the last law, by John Slaughter, the present incumbent, who, as territorial librarian, is, *ex officio*, superintendent of public instruction.

School System.—The care of the public schools of the territory is intrusted to the *superintendent of public instruction*, whose term of office is two years, and who, in addition to the usual duties pertaining to his office, apportions the school fund, and makes a report direct to the assembly, on the first day of each regular session. A *county superintendent* is elected biennially in each county, and three *district directors* are annually elected in each district. The duties of these are almost identical with those of similar officers in other parts of the country. The public schools are open to all children between the ages of 7 and 21. When there are 15 or more colored children in any district, a separate school may be organized, for their instruction, by the district directors and the county superintendent. The schools are supported by a two-mill tax levied annually in each county, school-districts assessing themselves for additional amounts when necessary. In the employment of teachers, no discrimination can be legally made on account of sex. All children in good health are compelled by law to attend school at least three months each year. The schools are elementary in character; but graded schools may be established in any district, upon the decision, to that effect, of the district directors and the county superintendent. The territorial superintendent and the several county superintendents are required to hold annually a teachers' institute, not less than four nor more than ten days in length, at which a uniform series of text-books, for three years, throughout the territory, is designated. The length of the school year is 10 months.

Educational Condition.—The following are the principal items of *school statistics* for 1875:

Number of school-houses	13
" " pupils enrolled	1,222
" " teachers	23
Total expenditures	$16,400
Value of school property (not including land)	$32,500

No provision for superior or special instruction of any kind has yet been made.

XENIA COLLEGE, at Xenia, Ohio, chartered in 1850, and organized 1851, is under Methodist Episcopal control. It was originally organized for females only, but was soon thrown open to young men also. It comprises a collegiate course (classical and scientific), and a preparatory, a primary, and a normal department. Facilities are also afforded for instruction in music. The regular tuition fees vary from $26 to $36 a year. In 1875—6, there were 9 professors and other instructors and 230 students (83 collegiate, 19 preparatory, 30 primary, and 98 normal). William Smith, A. M., is (1877) the president of the college.

YALE, Elihu, an American merchant, the patron, though not the founder, of Yale College, was born in New Haven, April 5., 1648; and died in London, Eng., July 22., 1721. In 1678, he went to the East Indies, and, from 1687 to 1692, was governor of Fort St. George, Madras. He was afterward made governor of the East India Company, and a fellow of the Royal Society. His gifts to the institution which afterwards bore his name, were estimated at £500. At first, only the new building, which had been erected in New Haven, was named after him; but, by the charter of 1745, this title was extended to the whole institution. A synopsis of his life may be found in the *Yale Literary Magazine*, April, 1858.

YALE COLLEGE, in New Haven, Ct., is one of the oldest and most important educational institutions in the United States. In 1701, the general assembly granted a charter for a "collegiate school," and the trustees selected Saybrook as its site. The first commencement was held in 1702. The instruction seems to have been given partly at Saybrook, and partly at Killingworth and Milford, where the first two rectors resided. In 1716, the trustees voted to establish the college permanently at New Haven, and, in 1718, a building was completed there, which, in honor of Elihu Yale, a benefactor, was named Yale College, a designation at first confined to the building, but authoritatively applied to the institution as a whole, by the new charter of 1745. The principal buildings occupy a square of about eight acres, west of the public green. They are 16 in number. The two buildings of the Divinity School, the two buildings of the Scientific School, and the Medical School are off the main square. The Law School is in the county court-house. The invested funds, in 1875, amounted to $1,550,000; the income was $235,465, including $107,000 from students. The institution possesses valuable museums, cabinets, and apparatus. The departments of instruction in Yale College are comprehended under four divisions, as follows: the faculty of theology (organized in 1822); of law (1824); of medicine (1812); and of philosophy and the arts. Under the last-named faculty are included, the courses for graduate instruction, the under-graduate academical department, the under-graduate section of the Sheffield Scientific School (1847), and the School of the Fine Arts (1866)—each having a distinct organization. In the academical department, the course is for four years, and leads to the degree of A. B. The charge for tuition and incidentals is $140 a year. The sum of $11,000 and upward, derived partly from permanent charitable funds, is annually applied by the Corporation for the relief of students who need pecuniary aid, especially of those preparing for the Christian ministry. About 100 thus have their tuition either wholly or in part remitted. There are two fellowships, the holders of which are required to pursue nonprofessional post-graduate studies in New Haven. The catalogue of 1876—7 shows some changes in the course of studies published in that of 1875—6 (from which the statement in the article College was taken), especially in the greater range of elective studies. There are professorships of moral philosophy and metaphysics; natural philosophy and astronomy; geology and mineralogy; Latin language and literature; mathematics; Greek language and literature; rhetoric and English literature; history; molecular physics and chemistry; modern languages; German language and literature; political and social science. The Sheffield Scientific School received its name in 1860, when it was re-organized upon a more extensive scale through the munificence of Joseph E. Sheffield, of New Haven. In 1863, it received the congressional land grant, and became the College of Agriculture and the Mechanic Arts of Connecticut. The under-graduate courses of instruction, occupying three years, are arranged to suit the requirements of various classes of students. The first year's work is the same for all; during the last two years, the instruction is chiefly arranged in special courses. The special courses most distinctly marked out are the following: (1) in chemistry; (2) in civil engineering; (3) in dynamic (or mechanical) engineering; (4) in agriculture; (5) in natural history; (6) in the subjects preparatory to medical studies; (7) in studies preparatory to mining and metallurgy; (8) in select studies preparatory to other higher studies. These courses lead to the degree of Ph. B. The charge for tuition is $150 a year. There are professorships of mineralogy; civil engineering; astronomy and physics; dynamic engineering; theoretical and agricultural chemistry; agriculture; mathematics; botany; English; palæontology; political economy and history; analytical chemistry and metallurgy; zoölogy; chemistry; and comparative anatomy. The School of the Fine Arts has for its end the cultivation and promotion, through practice and criticism, of the arts of design; namely, painting, sculpture, and architecture, both in their artistic and esthetic aims. The design is, (1) to provide thorough technical instruction in the arts of painting, sculpture, and architecture; and (2) to furnish an acquaintance with all branches of learning relating to the history, theory, and practice of art. The course of technical instruction covers three years. No provision has been made for instruction in the departments of sculpture and architecture; but it is hoped that, before long, this will be provided. There is a professor of painting, a professor of drawing, and an instructor in geometry and perspective. The chairs of sculpture, architecture, and anatomy are unfilled. The school is open to both sexes. The charge for tuition is $36 for three months. In the departments of philosophy and the arts, there are various post-graduate courses, which may be pursued by candidates for the degrees of A. M., Ph. D., and civil and dynamical engineer, or by graduates not candidates for a further degree. In the theological department, there is no charge for tuition or for room rent. There are several scholarships for the aid of needy students. In the law department, the under-graduate course is two years. There is a post-graduate, course of one year for the degree of Master of Law, and of two years, for the degree of Doctor of Civil Law. The libraries of the institution contain 117,000 volumes; namely, college library (exclusive of pamphlets), 80,000; Linonian and Brothers (society) library, 20,000; libraries of the professional schools, 17,000. The Peabody Museum of Natural History was founded, in 1866, by George Peabody, by a gift of $150,000. One wing of the building has been completed. In 1876—7, there were 87 instructors in all the departments, besides special lecturers. The students were as follows: theological, 95; law, 60; medical, 36; department of philosophy and the arts, 860 (graduate students, 67; special students, 2; academic under-graduates, 569; scientific, 206; fine arts, 16); total, deducting repetitions, 1,021. The number of degrees conferred, prior to 1875, was 10,605, including 870 honorary degrees; the number of academic *alumni* was 8,464. The government of the college is administered by the president and 18 fellows, of whom the governor and lieutenant-governor of Connecticut are, *ex officio*, two. Six are elected by the *alumni;* and the remaining ten, who are Congregational clergymen, are chosen by the fellows themselves. The rectors and presidents have been as follows: Abraham Pierson, 1701—7; Samuel Andrew (*pro tem.*), 1707—19; Timothy Cutler, 1719—22; Samuel Andrew (*pro tem.*), 1722—5; Elisha Williams, 1725—39; Thomas Clap, 1739—66; Naphtali Daggett, 1766—77; Ezra Stiles, 1777—95; Timothy Dwight, 1795—1817; Jeremiah Day, 1817—46; Theodore Dwight Woolsey, 1846—71; and Noah Porter, since 1871.

ZOÖLOGY (Gr. ζῶον, an animal, and λόγος, a discourse) treats of the structure, classification, habits, etc., of animals. It is an important branch of descriptive natural science, or natural history, and usually forms a part of the course of study in various grades of schools. In elementary instruction, it constitutes, with its sister science, botany, one of the most effective and available subjects for training the observing faculties; and, hence, is often comprised in the course of instruction prescribed for common schools. This subject has peculiar attractions for children; since, as is well known, they invariably manifest a deep interest in animal life. The principles by which the teacher should be guided in giving instruction in this, as in other branches of natural science, have been to some extent explained in previous articles. (See Astronomy, and Botany.) In teaching zoölogy, care must be particularly taken to exhibit as much as possible the natural objects themselves; and, in elementary teaching, this comes first. That is to say, the pupils are not to be required to commit to memory dry definitions and formulated statements; but their minds should be brought in contact with the living realities. (For a full synopsis of topics and methods for elementary instruction in this subject, see *How to Teach*, N. Y., 1874.) In the higher grades of instruction, the three different departments of the science — morphology, physiology, and distribution, should systematically be treated. In every grade of instruction, however, the teacher or professor cannot too closely follow the principle laid down by Huxley: "The great business of the scientific teacher is to imprint the fundamental, irrefragable facts of his science, not only by words upon the mind, but by sensible impressions upon the eye, and ear, and touch of the student, in so complete a manner, that every term used, or law enunciated, may afterwards call up vivid images of the particular structural, or other, facts which furnished the demonstration of the law, or the illustration of the term." Moreover, every teacher should bear in mind that a good share of his own knowledge should be at first-hand—acquired by his own observation, not simply gleaned from books—or he will not succeed in awakening an interest in the minds of his pupils. The proper method of teaching this subject has been clearly shown by one of its greatest masters. (See Huxley, *On the Study of Zoölogy*, in *The Culture demanded by Modern Life*, N. Y., 1867.) (See Science, The Teaching of.)

THE END.

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APPENDIX

TO THE THIRD EDITION OF THE

CYCLOPÆDIA OF EDUCATION.

LATE EDUCATIONAL STATISTICS.

ALABAMA. *Population* (Census of 1880), 1,262,794. *Number of children of school age* (7—21), — white, 224,464; colored, 176,538; total, 387,769. *Number enrolled in public schools*, — white, 107.949; colored, 69,479. *Average daily attendance*, — white, 67,381; colored, 47,146. *Number of schools*, — white, 3,058; colored, 1,566. *Number of teachers*, — white, 3,056; colored, 1,508: males, 2,938; females, 1,626. *Annual educational income*, $392,904. *State Superintendent*, H. CLAY ARMSTRONG, Montgomery.

ARIZONA. *Population* (1880), 40,441. *Number of children of school age* (6—21), 5,291. *Enrolled in public schools*, 3,143. *Average daily attendance*, 1,992. *Number of schools*, 51. *Number of teachers*, — male 27; female, 24. *Average monthly salary*, — of males, $84; of females, $68. *Educational income*, $32,421. *Superintendent of Schools*, MOSES H. SHERMAN.

ARKANSAS. *Population* (1880), 802,564. *Number of children of school age* (6—21), — white, 212,940; colored, 69,113; total, 282.053. *Number attending public schools*, 117,696. *Number of schools*, 1,172. *Number of teachers*, — males, 1,977; females, 441. *Raised for school purposes* (year ending June 30, 1882), $717,371. *Expenditure*, $388,412.22. *State Superintendent*, W. E. THOMPSON, Little Rock.

CALIFORNIA. *Population* (1880), 864,686. *Number of children of school age* (5—17), — white, 214,368; colored, 1,120; Indian, 842. *Enrolled in public schools*, 168,024. *Average daily attendance*, 107,177. *Number of schools*, 3,036. *Number of teachers*, — males, 1,156; females, 2,621. *Average monthly salary*, — of males, $79.67; of females, $64.48. *Educational income*, $3,791,384. *Value of school property*, $7,237,669. *State Superintendent*, WM. T. WELCKER, Sacramento.

COLORADO. *Population* (1880), 194,649. *Number of children of school age* (6—21), 49,208. *Enrolled in public schools*, 31,738. *Average daily attendance*, 18,488. *Number of school districts*, 511. *Number of teachers*, 900. *Annual income*, $768,032. *Value of school property*, $1,235,491. *State Superintendent*, L. S. CORNELL, Denver.

CONNECTICUT. *Population* (1880), 622,700. *Number of children of school age* (4—16), 146,188. *Enrolled in public schools*, 121,185. *Average attendance*, — winter, 77,041; summer, 69,636. *Number of children attending private schools*, 12,899 (approximate). *Number of schools*, 1,624. *Number of teachers*, — in winter — males, 617; females, 2,213; in summer, — males, 316; females, 2,503. *Average monthly salary*, — of males, $63.44; of females, $35.94. *Total school revenue*, $1,563,750.30. *School expenditure*, $1,553,065.16. *Secretary of State Board of Education*, CHARLES D. HINE, Hartford.

DAKOTA. *Population* (1880), 134,560. *Territorial school census* (1882), 229,432. *Number of children of school age* (5—21), 58,715. *Enrolled in public schools*, 31,800. *Number of school districts*, 1,593. *Number of teachers*, 1,649. *Average monthly salary*, — males, $32; females, $26. *Educational income* (entirely by taxation), $379,400. *Superintendent of Public Instruction*, WM. H. H. BEADLE, Yankton.

DELAWARE. *Population* (1880), 146,654. *Number of children of school age* (6—21), — white, 33,133; colored, 4,152. *Enrolled in public schools*, — white, 26,578; colored, 2,254. *Number of schools*, 583. *Number of teachers*, — males, 237; females, 346. *Average monthly salary*, — of males, $31.49; of females, $27.56. *Educational income*, $150,901. *School fund*, $495,749. *State Superintendent of Free Schools*, JAMES H. GROVES, Smyrna.

DISTRICT OF COLUMBIA. *Population* (1880), 177,638. *Number of children of school age* (6—17), — white, 29,612; colored, 13,946. *Enrolled in public schools*, — white, 18.678; colored, 9,642. *Average daily attendance*, 22,830. *Number of teachers*, — male, 37; female. 448. *Average annual salary*, — of males, $1050; of females, $650. *Educational income*, $546,811. *School Superintendent*, J. ORMOND WILSON, Washington.

FLORIDA. *Population* (1880), 267,351. *Number of children of school age* (4—21), 72,985. *Enrolled in public schools*, 39,315. *Average attendance*, 27,046. *Number of schools*, 992. *Number of teachers*, 1.095. *Expenditure for school purposes*, $114,895.41. *State Superintendent*. E. K. FOSTER, Tallahassee.

GEORGIA. *Population* (1880), 1,539,048. *Number of children of school age* (6—18), — white, 236,319; colored, 197,125. *Enrolled in public schools*, — white, 153,156; colored, 91,041; total, 244,197. *Average attendance*, 149,908. *Number of teachers*, 6,535 (about 1,600 colored). *Number of schools*, — white, 4,053; colored, 1,704. *Educational income*, $498,533 ($1.15 *per capita* on school population, $2.04 on enrollment, and $3.32 on average attendance). *State School Commissioner*, Gustavus J. Orr, Atlanta.

IDAHO. *Population* (1880), 32,611. *Number of children of school age* (5—21), 9,650. *Number of schools*, 200. *Educational income*, $60,000. *Superintendent of Schools*, James L. Onderdonk, Boise City.

ILLINOIS. *Population* (1880), 3,078,769. *Number of children of school age* (6—21), — males, 526,461; females, 511,106. *Enrolled in public schools*, — males 364,043; females, 349,498. *Average daily attendance*, 452,485. *Number of children attending private schools*, 67,380. *Number of schools*, — graded, 1,120; not graded, 10,828. *Number of teachers*, — males, 8,076; females, 14,225. *Average monthly salary*, — of males, $46.86; of females, $37.76. *Educational income*, $10,537,296. *School expenditure* (1882), $8,043,430. *State Superintendent*, Henry Raab, Springfield.

INDIANA. *Population* (1880), 1,978,362. *Number of children of school age* (6—21), 710,458. *Enrolled in public schools*, — white, males, 255,762; females, 234,402: colored, males, 4,224; females, 4,404. *Total number of children enrolled*, 490,164. *Average daily attendance*, 305,513. *Number of schools*, 9,647. *Number of teachers*, — males, 8,573; females, 6,810 (colored, 115). *Total school funds*, $9,207,411.51. *Annual educational income*, $3,000,000. *State Superintendent*, John M. Bloss, Indianapolis.

IOWA. *Population* (1880), 1,624,620. *Number of children of school age* (5—21), — males, 303,239; females, 291,491. *Enrolled in public schools*, 431,513. *Average attendance*, 254,088. *Number of schools*, — graded, 503; ungraded, 10,741. *Number of teachers*, — males, 6,546; females, 15,230. *Average monthly salary*, — of males, $32.50; of females, $27.25. *School fund*, $3,547,123. *Educational income*, $4,879,909. *Value of school property*, $9,738,623. *State Superintendent*, John W. Akers, Des Moines.

KANSAS. *Population* (1880), 995,966. *Number of children of school age* (5—21), — males, 184,774; females, 173,146. *Enrolled in public schools*, — males, 139,484; females, 130,461. *Average daily attendance*, 162,017. *Number of schools*, 6,003. *Number of teachers*, — males, 3,342; females, 4,808. *Average monthly salary*, — of males, $31.42; of females, $24.95. *School fund*, $2,550,000, besides 2,600,000 acres of lands. *Educational income*, $2,301,001.09. *Value of school property*, $4,633,044. *State Superintendent*, H. C. Speer, Topeka.

KENTUCKY. *Population* (1880), 1,648,708. *Number of children of school age*, — whites (6—20), 478,554; colored (6—16), 70,234. *Enrolled in public schools*, — whites, 208,500; colored, 19,107. *Attending private schools*, 35,000. *Average daily attendance*, — whites, 139,179; colored, 13,393. *Number of teachers*, — white, 6,335 (1,989 females); colored, 435. *Average monthly salary*, — of males, $40; of females, $35. *School fund*, $1,600,000. *Educational income*, $1,827,575. *Value of school property*, $2,300,000. *State Superintendent*, Joseph D. Pickett, Frankfort.

LOUISIANA. *Population* (1880), 940,103. *Number of children of school age* (6—18), — white, 139,657; colored, 150,379. *Enrolled in public schools*, — whites, 31,642; colored, 22,670. *Number of schools*, 874. *Number of teachers*, — white, 959; colored, 327. *Average monthly salary*, — in New Orleans, $52.50; in country parishes, $25.62. *Educational income*, $444,979. *State Superintendent*, Edwin H. Fay, Baton Rouge.

MAINE. *Population* (1880), 648,945. *Number of children of school age* (4—21), 212,521. *Enrolled in public schools*, 147,697. *Average daily attendance*, 99,814. *Number of schools*, 4,955. *Number of free high schools*, 101. *Number of teachers*, — in summer, male, 226; female, 4,698: in winter, male, 2,113; female, 2,587. *Average monthly salary*, — of males, $29.59; of females, $14.60. *Annual educational expenditure*, $933,829. *Value of school property*, $3,070,326. *State Superintendent*, N. A. Luce, Augusta.

MARYLAND. *Population* (1880), 934,632. *Number of children of school age* (6—21), 602,952. *Enrolled in public schools*, 159,945. *Average daily attendance*, 79,739. *Number of schools*, 2,058. *Number of teachers*, 3,197. *Average monthly salary*, $43.49. *School fund*, $906,229. *Educational expenditure*, $1,604,580. *Secretary of State Board of Education*, M. A. Newell, Baltimore.

MASSACHUSETTS. *Population* (1880), 1,783,012. *Number of children of school age* (5—15), 321,377. *Enrolled in public schools*, 330,421. *Average daily attendance*, 235,739. *Number of children attending private and parochial schools and academies*, 29,865. *Number of schools*, 6,090. *Number of high schools*, 221. *Number of teachers*, — male, 1,079; female, 7,858. *Average monthly salary*, — of males, $102.90; of females, $34.32. *School fund*, $2,711,263. *Annual educational expenditure*, $5,881,123. *Secretary of State Board of Education*, John W. Dickinson, Boston.

MICHIGAN. *Population* (1880), 1,636,331. *Number of children of school age* (5—20), 538,802. *Enrolled in public schools*, 385,504. *Attending private schools*, 20,577. *Number of public schools*, — graded, 439; ungraded, 6,191. *Number of teachers*, — male, 3,887; female, 10,580. *Average monthly salary*, —

of males, $41.56; of females, $27.44. *Permanent School fund*, $3,619,959.96. *Annual income, from all sources*, $4,747,421.65. *Value of school property*, $9,848,493. (Report for the year ending Dec. 31, 1882). *State Superintendent*, Varnum B. Cochran, Marquette; *Deputy Superintendent*, W. L. Smith, Lansing.

MINNESOTA. *Population* (1880), 875,000 (estimated). *Number of children of school age* (5—21), 315,948. *Enrolled in public schools*, 196,643. *Number of schools*, — graded, 136; ungraded, 4,501. *Number of teachers*, — males, winter, 1,625; summer, 662; females, winter, 2,711; summer, 3,338. *Average monthly salary*, — of males, $36.50; of females, $28.50. *School fund*, $5,295,101.47. *Annual income*, $267,082.32. Total Revenue, $2,120,364. *Value of school property*, $3,947,057. *State Superintendent*, D. L. Kiehle, St. Paul.

MISSISSIPPI. *Population* (1880), 1,131,592. *Number of children of school age* (5—21), — whites, 156,434; colored, 205,936. *Enrolled in public schools*, — whites, 111,655; colored, 125,633. *Number of teachers*, — whites, 3,414; colored, 2,644: male, 3,577; female, 1,790. *Average monthly salary*, — of males, $30.07; of females, $30.07. *School fund*, $815,229. *Educational income*, $716,342. *State Superintendent*, J. A. Smith, Jackson.

MISSOURI. *Population* (1880), 2,168,804. *Number of children of school age* (6—20), — whites, 704,550; colored, 37,891. *Enrolled in public schools*, — whites, 467,811; colored, 25,069. *Number of schools*, — for whites, 8,321; for colored, 501. *Number of teachers*, 10,743. *School fund*, $9,554,349. *Educational income*, $641,483. *Value of school property*, $7,521,695. *State Superintendent*, R. D. Shannon, Jefferson City.

MONTANA. *Population* (1880), 39,157. *Number of children of school age* (4—21), — males, 5,832; females, 5,437. *Enrolled in public schools*, 6,000. *Average daily attendance*, 3,700. *Number of schools*, 189. *Number of teachers*, — male, 64; female, 127. *Average monthly salary*, — of males, $75.74; of females, $64.20. *Educational income*, $90,204. *Superintendent of Public Instruction*, R. H. Howey, Helena.

NEBRASKA. *Population* (1880), 452,433. *Number of children of school age* (5—21), — male, 86,395; female, 79,116. *Enrolled in public schools*, 116,546. *Number of schools*, — graded, 74; ungraded, 3,241. *Number of teachers*, — male, 1,706; female, 3,120. *Average monthly salary*, — of males, $36.20; of females, $29.40. *School fund*, $2,402,455. *Value of school property*, $2,234,465. *Educational income*, $1,540,952. *State Superintendent*, W. W. W. Jones, Lincoln.

NEVADA. *Population* (1880), 62,265. *Number of children of school age* (6—18), — male, 5,223; female. 5,369. *Number of teachers*, — male, 92, female, 105. *Number of schools*, 195. *School fund*, $415,000. *Educational income*, $161,405. *State Superintendent*, D. R. Sessions. Carson City.

NEW HAMPSHIRE. *Population* (1880), 346,984. *Number of children of school age* (5—21), 72,002. *Enrolled in public schools*, 64,347. *Average daily attendance*, 43,996. *Number of schools*, 2,644. *Number of teachers*, — male, 477; female, 3,117. *Average salary* (including board), — of males, $36.45; of females, $22.36. *Educational income*, $584,527.74. *Value of school property*, $2,303,248.03. *State Superintendent*, J. W. Patterson, Concord.

NEW JERSEY. *Population* (1880), 1,130,983. *Number of children of school age* (5—18), 343,897. *Enrolled in public schools*, 209,526. *Average attendance*, 113,532. *Number of children attending private schools*, 44,560. *Number of school districts*, 1,366; *of school buildings*, 1,577; *of separate school departments*, 3,511. *Number of teachers*, — male, 991; female, 2,594. *Average monthly salary*, — of males, $56.96; of females, $33.41. *Total appropriation for school purposes*, $2,142,384.74. *State Superintendent*, Ellis A. Apgar, Trenton.

NEW MEXICO. *Population* (1880), 118,430. *Number of children of school age*, 25,000. *Enrolled in public schools*, 5,151. *Number of teachers*, 147. *Monthly salary*, from $16.30 to $40. *Educational income*, $25,473.

NEW YORK. *Population* (1880), 5,082,871. *Number of children of school age* (5—21), 1,681,161. *Enrolled in public schools*, 1,041,068. *Average daily attendance*, 569,472. *Number of school districts*, 11,257. *Whole number of pupils taught*, — in common schools, 1,041,068; in normal schools, 6,152; in academies, 34,171; in colleges, 6,496; in private schools, 115,646; in law schools, 609; in medical schools, 3,011; total, 1,207,153. *Number of children in Indian schools*, 1,174. *Number of teachers*, — male, 7,123; female, 24,110. *Average monthly salary*, $43.28. *Capital of Common-School Fund*, $3,802,902. *Annual income*, $12,544,210. *State Superintendent*, Neil Gilmour, Albany.

NORTH CAROLINA. *Population* (1880), 1,399,750. *Number of children of school age* (6—21), — whites, 291,770; colored, 167,554. *Attending public schools*, — white, 136,481; colored, 89,125. *Average daily attendance*, 147,802. *Number of schools*, — for whites, 3,523; for colored, 1,789. *Number of teachers*, — male, 2,006; female, 1,721: white, 2,727; colored, 1,403. *Average monthly salary*, $21.91. *Educational income*, $523,555. *State Superintendent*, J. C. Scarborough, Raleigh.

OHIO. *Population* (1880), 3,198,239. *Number of children of school age* (6—21), — males, 552,587, females, 528,734; total, 1,081,321 (of whom 25,074 are colored). *Enrolled in public schools*, — males, 390,303; females, 360,798. *Average daily attendance*, — males, 246,425; females, 236,807. *Number of schools*, 12,264. *Number of teachers*, — male, 11,086; female, 13,049. *Educational income*, $12,236,358. *State Commissioner of Common Schools*, D. F. De Wolf, Columbus.

OREGON. *Population* (1880), 174,767. *Number of children of school age* (4—20), 56,464. *Enrolled in public schools*, 32,718. *Average daily attendance*, 20,840. *Number of teachers*, — male, 539; female, 460. *Average monthly salary*, — of males, $43.90; of females, $33.80. *School fund*, $562,830, besides 1,000,000 acres of land. *Educational income*, $351,673. *State Superintendent*, L. J. Powell, Salem.

PENNSYLVANIA. *Population* (1880), 4,282,786. *Number of children of school age* (6—21), 1,200,000. *Enrolled in public schools*, — males, 482,286; females, 463,059. *Average daily attendance*, 611,317. *Number of schools*, — graded, 7,812; ungraded, 11,371. *Number of teachers*, — male, 9,051; female, 12,778. *Average monthly salary*, — of males, $35.12; of females, $28.89. *Educational income*, $8,263,244.-00. *State Superintendent*, E. E. Higbee, Harrisburg.

RHODE ISLAND. *Population* (1880), 276,528. *Number of children of school age* (5—15), — males, 28,273; females, 27,559. *Enrolled in public schools*, 41,658. *Average daily attendance*, 27,467. *Number of children attending private or select schools*, 6,964. *Number of schools*, — graded, 539; ungraded, 294. *Number of teachers*, — male, 182; female, 933. *Average monthly salary*, — of males, $77.44; of females, $43.53. *Educational income*, $608,125. *Value of school property*, $2,064,693. *State Commissioner of Public Schools*, Thomas B. Stockwell, Providence.

SOUTH CAROLINA. *Population* (1880), 995,577. *Number of children of school age* (6—16), — whites, 101,189; colored, 180,475. *Enrolled in public schools*, — whites, 65,399; colored, 80,575. *Number of school districts*, 484. *Number of public schools*, 3,183. *Number of teachers*, — white, 2,126; colored, 1,287: males, 1,940; females, 1,473; total, 3,413. *Average monthly salary*, — of males, $26.00; of females, $23.97. *Educational income*, $452,965. *State Superintendent*, A. Coward, Columbia.

TENNESSEE. *Population* (1880), 1,542,-463. *Number of children of school age* (6—21), — whites, 403,353; colored, 141,509. *Enrolled in public schools*, — whites, 229,290; colored, 60,851. *Average daily attendance*, — whites, 150,854; colored, 40,607. *Number of schools*, — for whites, 4,334; for colored, 1,188. *Number of teachers*, — white, male, 3,506; female, 1,201: colored, male, 913; female, 334. *Average monthly salary*, $26.66. *Educational income*, $930,734. *State Superintendent*, W. S. Doak, D. D., Nashville.

TEXAS. *Population* (1880), 1,592,574. *Number of children of school age* (8—14), 300,000. *Enrolled in public schools*, 250,000. *Number of schools*, — for whites, 5,500; for colored, 1,500. *Number of teachers*, — white, male, 2,895; female, 760: colored, male, 562; female, 113. *Average monthly salary*, — of males, $42; of females, $33. *School fund*, $3,385,571. *Educational income*, $972,904. *Secretary State Board of Education*, O. N. Hollingsworth, Austin.

UTAH. *Population* (1880), 143,906. *Number of children of school age* (6—18), — males, 22,087; females, 21,216. *Enrolled in public schools*, — males, 14,566; females, 12,650. *Average daily attendance*, 17,594. *Number of schools*, 388. *Number of teachers*, — male, 261; female, 234. *Average monthly salary*, — of males, $46.43; of females, $26.93. *Educational income*, $136,689. *Superintendent of District Schools*, L. John Nuttall, Salt Lake City.

VERMONT. *Population* (1880), 332,286. *Number of children of school age* (5—20), 92,535. *Enrolled in public schools*, 73,068. *Average daily attendance*, 47,772. *Number of children attending private schools*, 7,468. *Number of schools*, 2,527. *Number of teachers*, — male, 653; female, 3,723. *Average monthly salary* (with board), — of males, $30.52; of females, $18.24. *School fund*, $669,087. *Educational income*, $491,021. *State Superintendent*, Justus Dartt, Ascutneyville.

VIRGINIA. *Population* (1880), 1,512,806. *Number of children of school age* (5—21), — whites, 314,827; colored, 240,980. *Enrolled in public schools*, — whites, 172,634; colored, 85,328. *Average daily attendance*, — whites, 97,997; colored, 46,907. *Number of children attending private schools*, 25,720. *Number of schools*, — for whites, 3,939; for colored, 1,443. *Number of teachers*, — white, 4,538; colored, 1,059. *Average monthly salary*, — of males, $29.47; of females, $25.61. *Educational income*, $1,290,288. *State Superintendent*, R. R. Farr, Richmond.

WASHINGTON. *Population* (1880), 75,120. *Number of children of school age* (5—21), 29,871. *Enrolled in public schools*, 17,003. *Average daily attendance*, 11,135. *Number of schools*, 602. *Number of teachers*, — male, 287; female, 371. *Average monthly salary*, — of males, $44.17; of females, $35.62. *Educational income*, $120,000. *Superintendent of Schools*, C. W. Wheeler, Waitsburg.

WEST VIRGINIA. *Population* (1880), 618,443. *Number of children of school age* (6—21), 216,605. *Enrolled in public schools*, 155,544. *Average daily attendance*, 96,652. *Number of schools*, 4,028. *Number of teachers*, — male, 3,045; female, 1,315. *Average monthly salary*, — of males, $28.03; of females, $30.04. *Educational income*, $988,620. *School fund*, $509,305. *Value of school property*, $1,823.987. *State Superintendent*, B. L. Butcher, Wheeling.

WISCONSIN. *Population* (1880), 1,315,-480. *Number of children of school age* (4—20), — males, 251,828; females, 243,885; total, 495,-713. *Enrolled in public schools*, 303,807. *Number of schools*, — graded, 486; ungraded, 5,300.

Number of teachers, — male, 2,463; female, 7,632. *Average monthly salary,* — of males, $71.50; of females, $31. *School funds,* $4,486,215. *Educational income,* $3,241,342. *Value of school property,* $5,614,939. *State Superintendent,* Robert Graham, Madison.

WYOMING. *Population* (1880), 20,788. *School Age,* 6—21. *Enrolled in public schools,* — males, 1,332; females, 1,245. *Number of schools,* 65. *Number of teachers,* 68. *Educational income,* $41,882. *Superintendent of Public Instruction,* John Slaughter, Cheyenne.

COLLEGES AND UNIVERSITIES IN THE UNITED STATES.

NAME.	Location.	Org.	Religious Denomination.	President or other Chief Officer.	PI	St.
*Southern University	Greensboro, Ala.	1859	Meth. E. South	Rev. L. M. Smith, D.D.		
Howard College	Marion, Ala.	1842	Baptist	James T. Murfee, LL.D.	5	103
*Spring Hill College	near Mobile, Ala.	1830	Rom. Cath.	Rev. D. Beaudequin, S.J.		
University of Alabama	Tuscaloosa, Ala.	1831	Non-sect.	Burwell B. Lewis, LL.D.	13	150
*Arkansas College	Batesville, Ark.	1872	Presbyt.	Rev. Isaac J. Long, D.D.		
Cane Hill College	Boonsboro, Ark.	1858	Cumb. Presb.	Rev. F. R. Earle, A.M.	3	15
*Arkansas Industrial University	Fayetteville, Ark.	1871	Non-sect.	Gen. D. H. Hill		
Judson University	Judsonia, Ark.	1871	Baptist	Rev. Richard S. James, D.D., LL.D.	6	26
*St. John's College of Arkansas	Little Rock, Ark.	1859	Non-sect.	Rev. Leo Baier, A.M.		
Missionary College of St. Augustine	Benicia, Cal.	1867	Prot. Episc.	Rt. Rev. J. H. D. Wingfield, D.D., LL.D.	6	38
University of California	Berkeley, Cal.	1868	Non-sect.	W. T. Reid	52	221
Pierce Christian College	College City, Cal.	1871	Christian	James C. Keith, A.B.	8	85
St. Vincent's College	Los Angeles, Cal.	1869	Rom. Cath.	Rev. M. V. Richardson, C.M.	6	
University of Southern California	Los Angeles, Cal.	1880	Meth. Episc.	M. M. Bovard	10	50
*St. Ignatius College	San Francisco, Cal.	1855	Rom. Cath.	Rev. R. E. Kenna, S.J.		
St. Mary's College	San Francisco, Cal.	1863	Rom. Cath.	Brother Bettelin	12	78
Santa Clara College	Santa Clara, Cal.	1851	Rom. Cath.	Rev. John Pinasco, S. J.	27	201
University of the Pacific	Santa Clara, Cal.	1852	Meth. Episc.	Rev. C. C. Stratton, A.M., D.D.	14	110
Pacific Methodist College	Santa Rosa, Cal.	1861	Meth. E. South	O. H. Roberts, A.M.	9	114
*College of our Lady of Guadalupe	Santa Ynez, Cal.		Rom. Cath.			
*California College	Vacaville, Cal.	1860	Baptist	Rev. Uriah Gregory, D.D.		
*Washington College	Washington Corners, Cal.	1871	Non-sect.	S. S. Harmon, A.M.		
Hesperian College	Woodland, Cal.	1860	Christian	A. M. Elston, A.M.	6	50
*University of Colorado	Boulder, Colo.	1877	Non-sect.	Joseph A. Sewell, M.D., LL.D.		
Colorado College	Colorado Springs, Col.	1874	Congregation	Rev. E. P. Tenney	8	12
University of Denver	Denver, Colo.	1880	Meth. Episc.	Rev. David H. Moore, A.M., D.D.	37	
Trinity College	Hartford, Conn.	1823	Prot. Episc.	Rev. Th. R. Pynchon, D.D., LL.D.	9	70
*Wesleyan University	Middletown, Conn.	1830	Meth. Episc.	Rev. John Wesley Beach, D.D.		
Yale College	New Haven, Conn.	1701	Non-sect.	Rev. Noah Porter, D.D., LL.D.	104	614
University of Dakota	Vermillion, Dak.	1881	Non-sect.	Eph. M. Epstein, M.D.	1	43
Yankton College	Yankton, Dakota	1881	Congregation.	Rev. Joseph Ward	2	
*Delaware College	Newark, Del.	1870	Non-sect.	William H. Purnell, A.M., LL.D.		
Georgetown College	Georgetown, D. C.	1789	Rom. Cath.	Rev. James A. Doonan, S.J.	44	140
*Columbian University	Washington, D. C.	1821	Baptist	James C. Welling, LL.D.		
*Gonzaga College	Washington, D. C.	1848	Rom. Cath.	Rev. Robert Fulton, S.J.		
Howard University	Washington, D. C.	1867	Non-sect.	Rev. Wm. W. Patton, D.D., LL.D.	32	13
*University of Georgia	Athens, Ga.	1801	Non-sect.	Rev. P. H. Mell, D.D., LL.D.		
*Atlanta-University	Atlanta, Ga.	1869	Non-sect.	Edmund A. Ware, A.M.		
Bowdon College	Bowdon, Ga.	1857	Non-sect.	Lucius C. Adamson, A.B.	2	63
Gainesville College	Gainesville, Ga.	1873	Non-sect.	Rev. J. J. Methvin	5	36
Mercer University	Mason, Ga.	1838	Baptist	Rev. A. J. Battle, D.D.	9	103
*Pio Nono College	Macon, Ga.	1874	Rom. Cath.	Rt. Rev. William H. Gross, D.D.		
Emory College	Oxford, Ga.	1837	Meth. E. South	Rev. Atticus G. Haygood, D.D.	15	252
*Abingdon College	Abingdon, Ill.	1855	Disciples	F. M. Bruner		
Hedding College	Abingdon, Ill.	1855	Meth. Episc.	Joseph S. Cumming	11	100
Illinois Wesleyan University	Bloomington, Ill.	1855	Meth. Episc.	Rev. W. H. H. Adams, D.D.	16	602
*St. Viateur's College	Bourbonnais Grove, Ill.	1865	Rom. Cath.	Rev. Peter Beaudoin, P.S.V.		
Blackburn University	Carlinville, Ill.	1860	Presbyterian	Rev. E. L. Hurd, D.D.	10	96
*Carthage College	Carthage, Ill.	1873	Evang. Luth.	Rev. A. Kunkelman, D.D.		
St. Ignatius College	Chicago, Ill.	1870	Rom. Cath.	Rev. Thomas O'Neil, S.J.	8	40
University of Chicago	Chicago, Ill.	1857	Baptist	Rev. Galusha Anderson, S.T.D.	20	60
Northern Illinois Normal School & Dixon Business College	Dixon, Ill.	1880	Non-sect.	J. C. Flint	15	
*Rock River University	Dixon, Ill.	1875	Non-sect.	A. M. Hansen		
*Eureka College	Eureka, Ill.	1855	Christian	H. W. Everest, A.M.		
Northwestern University	Evanston, Ill.	1855	Meth. Episc.	Rev. Jos. Cummings, D.D., LL.D.	59	668
Ewing College	Ewing, Ill.	1874	Baptist	John Washburn	7	30
Knox College	Galesburg, Ill.	1837	Christian	Newton Bateman, A.M., LL.D.	15	141
*Lombard University	Galesburg, Ill.	1866	Universalist	Rev. Nehemiah White, Ph.D.		
Irvington College	Irvington, Ill.	1863	Presbyterian	Rev. Edgar W. Clarke, A.M.	3	
*Illinois College	Jacksonville, Ill.	1829	Non-sect.	E. A. Tanner		
Lake Forest University	Lake Forest, Ill.	1857	Presbyterian	Rev. Daniel S. Gregory, D.D.	28	70
McKendree College	Lebanon, Ill.	1835	Meth. Episc.	Rev. Daniel W. Phillips, A.M.	10	109
Lincoln University	Lincoln, Ill.	1868	Cumb. Presb.	Rev. A. J. McGlumphy, D.D., LL.D.	12	430
*Evang.-Luther. Collegium	Mendota, Ill.		Evang. Luth.	Rev. S. Fritschel, D.D.		
Monmouth College	Monmouth, Ill.	1856	Unit. Presbyt.	Rev. J. B. McMichael, D.D.	14	221
Mount Morris College	Mount Morris, Ill.	1840	German Bapt.	D. L. Miller	8	263
*Northwestern College	Naperville, Ill.	1861	Evang.	Rev. A. A. Smith, A.M.		
Chaddock College	Quincy, Ill.	1856	Methodist	John T. Long, LL.D.	30	251
Augustana College	Rock Island, Ill.	1860	Swedish Luth.	Rev. T. N. Hasselquist, D.D.	14	77
St. Josephs Diocesan College	Teutopolis, Ill.	1861	Rom. Cath.	Very Rev. P. Michael Richards, O.S.F.	8	100
Shurtleff College	Upper Alton, Ill.	1827	Baptist	Rev. A.A. Kendrick, D.D.	8	56
Illinois Industrial University	Urbana, Ill.	1867	Non-sect.	Selim H. Peabody, Ph.D., LL.D.	24	280
Westfield College	Westfield, Ill.	1865	Unit. Brethren	Rev. Samuel B. Allen, D.D.	7	15
Wheaton College	Wheaton, Ill.	1860	Independent	Chas. A. Blanchard	10	25

Org. = Year of Organization. PI = Number of Professors and other Instructors. St. = Number of Students of Collegiate Grade.

From Colleges marked * no recent information has been received [Jan. 1883.]

COLLEGES AND UNIVERSITIES IN THE UNITED STATES. — Continued.

NAME.	Location.	Org.	Religious Denomination.	President or other Chief Officer.	PI	St.
*Bedford College	Bedford, Ind.	1871	Christian	J. A. Beattie, B.S., C.E.		
Indiana University	Bloomington, Ind.	1828	Non-sect.	Rev. Lemuel Moss	16	170
*Wabash College	Crawfordsville, Ind.	1830	Presbyterian.	Rev. Joseph F. Tuttle, D.D.		
Concordia College	Fort Wayne, Ind.	1839	Evang. Luth.	R. A. Bischoff	8	188
Fort Wayne College	Fort Wayne, Ind.	1846	Meth. Episc.	Rev. W. F. Yocum, A.M.	12	25
Franklin College	Franklin, Ind.	1844	Baptist	Rev. W. T. Stott, D.D.	8	40
Indiana Asbury University.	Greencastle, Ind.	1837	Meth. Episc.	Rev. Alex. Martin, D.D., LL.D.	16	300
Hanover College	Hanover, Ind.	1833	Presbyterian.	Rev. D. W. Fisher, D.D.	9	75
Hartsville University	Hartsville, Ind.	1851	Unit. Breth.	Rev. C. H. Kiracof, A. M.	7	40
Butler University	Irvington, Ind.	1852	Christian	H. W. Everest	20	100
Union Christian College	Merom, Ind.	1859	Christian	Rev. Elisha Mudge	10	25
Moore's Hill College	Moore's Hill, Ind.	1854	Meth. Episc.	L. G. Adkinson, A.M.	7	
University of Notre Dame	Notre Dame, Ind.	1842	Rom. Cath.	Rev. T. E. Walsh, C.S.C.	42	392
Earlham College	Richmond, Ind.	1859	Friends	Joseph Moore, A.M.	9	72
Ridgeville College	Ridgeville, Ind.	1867	FreeWillBapt.	Rev. Samuel D. Bates	5	46
St. Meinrad's College	St. Meinrad, Ind.	1857	Rom. Cath.	Rt. Rev. F. Mundwiler, O.S.B.	14	70
Amity College	College Springs, Ia.	1876	Non-sect.	Rev. S. C. Marshall, A.M.	7	50
Griswold College	Davenport, Ia.	1859	Prot. Episc.	Rev. J. W. Sprague	5	10
Norwegian Luther. College	Decorah, Ia.	1861	Evang. Luth.	Rev. Laur. Larsen	7	70
Drake University	Des Moines, Ia.	1861	Christian	Geo. T. Carpenter	33	
*University of Des Moines	Des Moines, Iowa	1866	Baptist	Rev. David Forrester Call, A.M.		
St. Joseph's College	Dubuque, Ia.	1878	Rom. Cath.	Very Rev. R. Ryan, V.G.	6	70
*Parsons College	Fairfield, Iowa	1875	Presbyterian.	Rev. T. D. Ewing, D.D.		
Upper Iowa University	Fayette, Ia.	1857	Meth. Episc.	Rev. J. W. Bissell, D.D.	8	44
*Iowa College	Grinnell, Iowa	1848	Congregat.	Rev. George F. Magoun, D.D.		
*Humboldt College	Humboldt, Ia.	1869	Non-sect.			
Simpson Centenary College.	Indianola, Ia.	1867	Meth. Episc.	Rev. Edw. L. Parks, A.M., B.D.	8	85
State University of Iowa	Iowa City, Ia.	1847	Non-sect.	Josiah L. Pickard, LL.D.	37	245
*German College	Mt. Pleasant, Iowa	1873	Meth. Episc.	Rev. William Balcke, A.M.		
Iowa Wesleyan University	Mt. Pleasant, Ia.	1855	Meth. Episc.	Rev. W. J. Spaulding, Ph.D.	6	134
Cornell College	Mt. Vernon, Ia.	1857	Meth. Episc.	Rev. Wm. F. King, D.D.	20	120
*Oskaloosa College	Oskaloosa, Iowa	1860	Christian	G. H. Laughlin, A.M.		
Penn College	Oskaloosa, Ia.	1872	Friends	Benjamin Trueblood, A.M.	7	65
Central University of Iowa.	Pella, Ia.	1853	Baptist	Geo. W. Gardner, D.D.	10	36
Whittier College	Salem, Ia.	1867	Friends	Guss. Walters	4	50
*Tabor College	Tabor, Iowa	1866	Congregation.	Rev. William M. Brooks, A.M.		
*Western College	Toledo, Iowa	1857	Unit. Breth.	Rev. Ezekiel B. Kephart, A.M.		
St. Benedict's College	Atchison, Kans.	1859	Rom. Cath.	Rt. Rev. Inn. Wolf, D.D., O.S.B.	17	31
*Baker University	Baldwin City, Kans.	1857	Meth. Episc.	Rev. W. H. Sweet, A.M.		
Highland University	Highland, Kans.	1858	Presbyterian.	H. D. McCarty, LL.D.	6	78
University of Kansas	Lawrence, Kans.	1865	Non-sect.	Rev. James Marvin, D.D.	14	496
*Lane University	Lecompton, Kans.	1862	Unit. Breth.	Rev. L. S. Tohill, A.M.		
Ottawa University	Ottawa, Kans.	1866	Baptist	T. M. Stewart, A.M.	4	
St. Mary's College	St. Mary's, Kans.	1869	Rom. Cath.	Rev. C. Coppens, S.J.	13	74
*Washburn College	Topeka, Kans.	1865	Congregation.	Rev. Peter McVicar, M.A., D.D.		
*St. Joseph's College	Bardstown, Ky.	1819	Rom. Cath.	Rev. W. P. Mackin		
*Berea College	Berea, Ky.	1858	Congregation.	Rev. E. H. Fairchild		
*Cecilian College	Cecilian, Ky.	1860	Rom. Cath.	H. A. Cecil		
Centre College	Danville, Ky.	1821	Presbyterian.	Ormond Beatty, LL.D.	6	94
*Eminence College	Eminence, Ky.	1857	Christian	W. S. Giltner		
*KentuckyMilitaryInstitute	Farmdale, Ky.	1845	Non-sect.	Col. R. D. Allen, M.A., M.D., C.E.		
*Georgetown College	Georgetown, Ky.	1830	Baptist	Rev. Richard M. Dudley, D.D.		
Kentucky University	Lexington, Ky.	1858	Christian	Chas. Louis Loos	11	180
Kentucky Wesleyan College.	Millersburg, Ky.	1866	Meth. Episc.	D. W. Batson, A.M.	4	83
*Murray Male and Female Institute	Murray, Ky.	1871	Non-sect.	H. E. Holton		
*Concord College	New Liberty, Ky.	1867	Baptist	James Rice		
Kentucky Classical Business College	North Middletown, Ky.	1877	Christian	E. V. Zollars	10	115
*Central University	Richmond, Ky.	1874	South Presb			
Bethel College	Russellville, Ky.	1856	Baptist	Leslie Waggener, LL.D.	5	78
*St. Mary's College	St. Mary's, Ky.	1821	Rom. Cath.	Rev. David Fenniessy, C.R.		
Louisiana State University & Agricultural & Mechanics College	Baton Rouge, La.	1860	Non-sect.	Wm. Preston Johnston	10	120
*Jefferson College	Convent, La.	1864	Rom. Cath.	Very Rev. John J. Grimes, S.M.		
*St. Charles College	Grand Coteau, La.	1837	Rom. Cath.	Rev. John Montillot, S.J.		
*Centenary College of Louisiana	Jackson, La.	1825	Meth. Episc.S.	Rev. C. G. Andrews, A.M., D.D.		
*College of the Im. Conception	New Orleans, La.			Very Rev. Th. W. Butler, S.J.		
*Leland University	New Orleans, La.	1871	Baptist	Seth J. Axtell, Jr.		
New Orleans University	New Orleans, La.	1873	Meth. Episc.	James A. Dean, D.D.	6	25
Straight University	New Orleans, La.	1869	Congregat.	Rev. W. S. Alexander, D.D.	13	61
University of Louisiana	New Orleans, La.	1847	Non-sect.	Hon. Rondell Hunt, LL.D.	24	500
Jefferson College (St. Mary's	St. James, La.		Rom. Cath.	Very Rev. J. B. Bigot, S.M.	15	100
Bowdoin College	Brunswick, Me.	1802	Congregat.	Joshua L. Chamberlain, LL.D.	21	152
Bates College	Lewiston, Me.	1863	Free Baptist.	Rev. Oren B. Cheney, D.D.	9	130
Colby University	Waterville, Me.	1820	Baptist	Rev. George D. B. Pepper, D.D.	10	126
*St. John's College	Annapolis, Md.	1789	Non sect.	James M. Garnett, M.A., LL.D.		
*Baltimore City College	Baltimore, Md.	1839	Non-sect.	William Elliot, Jr.		
Johns Hopkins University	Baltimore, Md.	1876	Non-sect.	Daniel C Gilman, A.M., LL.D.	38	195
Loyola College	Baltimore, Md.	1852	Rom. Cath.	Rev. Edward A. McGurk, S.J.	10	95
Washington College	Chestertown, Md.	1782	Non-sect.	Wm. J. Rivers, A.M.		
Rock Hill College	Ellicott City, Md.	1857	Rom. Cath.	Rev. Brother Azarias	16	50
St. Charles' College	Ellicott City, Md.	1848	Rom. Cath.	Rev. Peter Paul Denis, S.S., A.M.	11	112
Mt. St. Mary's College	Emmittsburgh, Md.	1808	Rom. Cath.	Very Rev. William Byrne, D.D.	18	85

COLLEGES AND UNIVERSITIES IN THE UNITED STATES. — Continued.

NAME.	Location.	Org.	Religious Denomination.	President or other Chief Officer.	PI	St.
Frederick College	Frederick, Md.	1829	Non-sect.	Thomas A. Gatch, A.M.	3	40
*Western Maryland College.	Westminster, Md.	1867	Meth. Protest.	Rev. James Thomas Ward, D.D.	13	90
Amherst College	Amherst, Mass.	1821	Congreg.	Rev. Julius H. Seelye, D.D., LL.D.	25	362
Boston College	Boston, Mass.	1864	Rom. Cath.	Rev. Jeremiah O'Conner, S.J.	15	100
Boston University	Boston, Mass.	1869	Meth. Episc.	Rev. Wm. F. Warren, S.T.D., D.D.		90
Harvard College	Cambridge, Mass.	1638	Non-sect.	Chas. W. Eliot, LL.D. [LL D.	55	929
Tufts College	College Hill, Mass.	1852	Universalist	Rev. Elmer Hewitt Capen, D.D.	13	75
*Williams College	Williamstown, Mass.	1793	Congregation.	Franklin Carter		
College of the Holy Cross	Worcester, Mass.	1843	Rom. Cath.	Rev. Edward D. Boone, S.J.	11	92
*Adrian College	Adrian, Mich.	1859	Meth. Prot.	Rev. G. B. McElroy, D.D., Ph.D.		
*Albion College	Albion, Mich.	1861	Meth. Episc.	Rev. L. R. Fiske, D.D., LL.D.		
University of Michigan	Ann Arbor, Mich.	1841	Non-sect.	James B. Angell, LL.D.	60	513.
*Battle Creek College	Battle Creek, Mich.	1874	7th Day Adv.	James White		
*Grand Traverse College	Benzonia, Mich.	1863	Cong.	L. D. Maltby, A.M.		
*Detroit College	Detroit, Mich.		Rom. Cath.	Rev. James J. Walshe, S.J.		
*Hillsdale College	Hillsdale, Mich.	1855	FreeWillBapt.	Rev. De Witt C. Durgin, D.D.		
*Hope College	Holland, Mich.	1863	Reformed	Rev. G. Henry Mandeville, D.D.		
Kalamazoo College	Kalamazoo, Mich.	1855	Baptist	Rev. Kendall Brooks, D.D.	7	51
Olivet College	Olivet, Mich.	1859	Cong. & Presb.	Rev. Horatio Q. Butterfield, D.D.	14	106
St. John's College	Collegeville, Minn.	1857	Rom. Cath.	Rt. Rev. Abbot Alex. Edelbrock, [O.S.B.	23	125
Augsburg Seminary Gr. Department	Minneapolis, Minn.	1874	Evang. Luth.	Prof. Georg Sverdrup	6	40
*Hamline University	Minneapolis, Minn.			Rev. D. C. John, D.D.		
*Macalester College	Minneapolis, Minn.	1874	Presbyt	Rev. Edward D. Neill		
University of Minnesota	Minneapolis, Minn.	1868	Non-sect.	William Walter Folwell, LL.D.	21	120
Carleton College	Northfield, Minn.	1866	Congregat.	James W. Strong, D.D.	15	62
Mississippi College	Clinton, Miss.	1850	Baptist	Rev. W. S. Webb, D.D.	6	150
Rust (formerly Shaw) University	Holly Springs, Miss.	1869	Meth. Episc.	Rev. W. W. Hooper, A.M.	6	50
*University of Mississippi	Oxford, Miss.	1848	Non-sect.	Alexander P. Stewart		
*Alcorn University	Rodney, Miss.	1871	Non-sect.	Rev. Hiram R. Revels		
Tougaloo University only Normal Dep. in operation	Tougaloo, Miss.	1871	Congregat.	Rev. G. Stanley Pope		
*Southwest Baptist College	Bolivar, Mo.		Baptist	Rev. J. R. Maupin, A.M.		
*Christian University	Canton, Mo.	1858	Christian	J. C. Reynolds		
St. Vincent's College	Cape Girardeau, Mo.	1843	Rom. Cath.	Rev. J. W. Hickey, C.M.	13	90
*University of the State of Missouri	Columbia, Mo.	1840	Non-sect.	S. S. Laws, A.M., M.D., LL.D.		
Central College	Fayette, Mo.	1857	Meth. Episc.	Rev. Eug. R. Hendrix, A.M., D.D.	8	90
*Westminster College	Fulton, Mo.	1849	S. Presbyt.			
*Lewis College	Glasgow, Mo.	1866	Meth. Episc.			
Pritchett Institute	Glasgow, Mo.	1866	Non-sect.	Rev. Jos. H. Pritchett, A.M.	8	60
*Lincoln College	Greenwood, Mo.	1870	United Presb.	W. Q. Bell, A.B.		
*Mount Pleasant College	Huntsville, Mo.			Rev. J. B. Weber, A.M.		
La Grange College	La Grange, Mo.	1859	Baptist	J. F. Cook, M.A., LL D.	5	100
*William Jewell College	Liberty, Mo.	1849	Baptist	Rev. W. R. Rothwell, D.D.		
*St. Joseph College	St. Joseph, Mo.	1867	Rom. Cath.	Rev. Brother Arthemian		
*College of the Christian Brothers	St. Louis, Mo.	1849	Rom. Cath.	Rev. Brother James		
St. Louis University	St. Louis, Mo.	1829	Rom. Cath.	Rev. R. J. Meyer, S.J.	18	150
*Washington University	St. Louis, Mo.	1859	Non-sect.	Rev. William G. Elliot, D.D.		
Drury College	Springfield, Mo.	1873	Congregat.	Rev. Nathan J. Morrison, D.D.	13	50
Stewartsville College	Stewartsville, Mo.	1863	Non-sect.	Rev. W. O. H. Perry, A.M.	4	60
Central Wesleyan College	Warrenton, Mo.	1864	Meth. Episc.	Rev. H. A. Koch, D.D.	9	50
*Doane College	Crete, Neb.	1873	Cong.	Rev. D. B. Perry, A.M.		
University of Nebraska	Lincoln, Neb.	1871	Non-sect.	H. E. Hitchcock	16	52
*Nebraska College	Nebraska City, Neb.					
*Creighton College	Omaha, Neb.	1878	Rom. Cath.	Rev. R. A. Schaffel, S.J.		
*Nebraska Wesleyan University	Osceola, Neb.	1879	Meth. Episc.			
*State University of Nevada	Elko, Nev.	1874	Non-sect.	W. C. Dovey		
*Dartmouth College	Hanover, N. H.	1770	Non-sect.	Rev. Sam. C. Bartlett, D.D., LL.D.		
*St. Peter's College	Jersey City, N. J.			Rev. John McQuaid, S.J.		
*St. Benedict's College	Newark, N. J.	1868	Rom. Cath.	Rev. Frederick Hoesel, O.S.B.		
Rutgers College	New Brunswick, N.J.	1770	Reform. Dutch	Merrill Edw. Gates, Ph.D., LL.D.	17	140
College of New Jersey	Princeton, N. J.	1747	Presbyt.	Rev. James McCosh, D.D., LL.D.	37	565
*Seton Hall College	South Orange, N. J.	1856	Rom. Cath.	Rev. James H. Corrigan, A.M.		
*Alfred University	Alfred, N. Y.	1857	7th Day Bapt.	Rev. J. Allen, D.D., Ph.D.		
*St. Bonaventure's College.	Allegany, N. Y.	1859	Rom. Cath.	Vy. Rev. Fr. Leo da Saracena, O.S.F		
St. Stephen's College	Annandale, N. Y.	1860	Episcopal	Rev. Rob. B. Fairbairn, D.D., LL.D.	6	55
Wells College	Aurora, N. Y.	1868	Presbyt.	Rev. Edward S. Frisbee, D.D.	12	50
*Brooklyn Coll. & Poly. Inst.	Brooklyn, N. Y.	1855	Non-sect.	D. H. Cochran, Ph.D., LL.D.		
*St. Francis College	Brooklyn, N. Y.	1871	Rom. Cath.	Bro. Jerome Magner, O.S.F.		
St. John's College	Brooklyn, N. Y.	1869	Rom. Cath.	Rev. J. A. Hartnett, C.M.	10	120
*Canisius College	Buffalo, N. Y.	1870	Rom. Cath.	Rev. Martin Port, S.J.		
*Martin Luther College	Buffalo, N. Y.		Evang. Luth.			
St. Joseph's College	Buffalo, N. Y.	1861	Rom. Cath.	Rev. Brother Frank, F.S.C.	14	140
St. Lawrence University	Canton, N. Y.	1856	Universalist	Rev. A. G. Gaines, D.D.	13	64
Hamilton College	Clinton, N. Y.	1812	Presbyt.	Rev. Henry Darlin, D.D., LL.D.	15	167
Elmira Female College	Elmira, N. Y.	1855	Presbyt.	Rev. Augustus W. Cowles, D.D.	13	66
*St. John's College	Fordham, N. Y.	1841	Rom. Cath.	Rev. F. Wm. Gockeln, S.J.		
Hobart College	Geneva, N. Y.	1825	Episcopal	Rev. Robert G. Hinsdale, S.T.D.	11	68
Madison University	Hamilton, N. Y.	1846	Baptist	Rev. Ebenezer Dodge, D.D., LL.D.	11	112
Cornell University	Ithaka, N. Y.	1868	Non-sect.	Andrew D. White, LL.D.	50	375
Ingham University	Le Roy, N. Y.	1824	Presbyt.	Dr. E. B. Walsworth	10	59
Manhattan College	Manhattanville, N.Y.	1853	Rom. Cath.	Rev. Brother Anthony, F.S.C.	29	280
College of St. Francis Xavier	New York, N. Y.	1847	Rom. Cath.	Rev. Sam. H. Frisbee, S.J.	10	120

COLLEGES AND UNIVERSITIES IN THE UNITED STATES. — Continued.

NAME.	Location.	Org.	Religious Denomination	President or other Chief Officer.	PI	St.
*Coll. of the City of NewYork	New York, N. Y.	1847	Non-sect.	Alexander S. Webb, LL.D.		
Columbia College...........	New York, N. Y.	1754	Non-sect.	F. A. P. Barnard, S.T.D., LL.D.,	30	277
*Rutgers Female College ...	New York, N. Y.	1838	Non-sect.	S. D. Burchard .... [L.H.D.		
Univers. of the City of N. Y.	New York, N. Y.	1831	Non-sect.	John Hall, D.D.	13	92
Vassar College	Pougkeepsie, N. Y. ..	1861	Non-sect.	Rev. Samuel L. Caldwell, D.D...	31	145
*University of Rochester...	Rochester, N. Y.	1850	Baptist	Martin B. Anderson, LL.D......		
Union College	Schenectady, N. Y...	1795	Non-sect.	Rev.Eliph. N. Potter, D.D ,LL D.	16	212
College and Seminary of Our Lady of Angels...........	[N. Y. Suspension Bridge,	1856	Rom. Cath. ..	Very Rev. P. V. Kavanagh, C.M.	15	206
Syracuse University........	Syracuse, N. Y.	1870	Meth. Episc. .	C. N. Sims, D.D.	[illegible]	390
University of North Carolina	Chapel Hill, N. C. ...	1789	Non-sect.	Kemp P. Battle, LL.D.	11	189
*Biddle University.........	Charlotte, N. C.	1867	Presbyt.	Rev. Stephen Mattoon, D.D.....		
*Davidson College	Davidson Coll., N. C.	1837	Presbyt.	Rev. A. D. Hepburn, D.D.		
*Rutherford College	Happy Home, N. C. .	1847	Non-sect.	Rev. Robert L. Abernethy, A.M..		
North Carolina College.....	Mt. Pleasant, N. C...	1859	Evang. Luth..	Rev. G. D. Bernheim, D.D.	4	20
*Shaw University	Raleigh, N. C.	1865	Baptist	Rev. H. M. Tupper, A.M........		
*Trinity College	Trinity College, N. C.	1852	Meth. Episc. S.	Rev. B. Craven, D.D., LL.D.		
Wake Forest College	Wake Forest, N. C. ..	1834	Baptist	Rev. W. B. Royall	7	117
*Weaverville College	Weaverville, N. C. ...	1874	Non-sect.			
Buchtel College	Akron, O.	1872	Universalist .	O. Cone, D.D.	8	65
*Ashland College..........	Ashland, O.	1879	Ger. Bapt. ...	Elder S. Z. Sharp, A.M.		
Ohio University	Athens, O.	1804	Non-sect.	William H. Scott	8	82
Baldwin University.........	Berea, O.............	1856	Meth. Episc. .	Aaron Schuyler, LL.D.	10	80
German Wallace College....	Berea, O.............	1864	Meth. Episc. .	Rev. William Nast, D.D.........	5	52
*Hebrew Union College	Cincinnati, O........	1874	Jewish	Rev. Isaac M. Wise		
St. Joseph College	Cincinnati, O.	1872	Rom. Cath. ..	Rev. P. J. Hurth, C.S.C.	12	110
St. Xavier College	Cincinnati, O	1832	Rom. Cath. ..	John I. Coghlan, S.J............	12	220
*University of Cincinnati...	Cincinnati, O........	1870	Non-sect.	Rev. Thomas Vickers...........		
Adelbert College of Western Reserve University.......	Cleveland, O.	1826	Christian.....	Carroll Cutler	9	80
*Farmers College	College Hill, O.	1852	Non-sect.	P. V. N. Myers, A.M.		
Capital University..........	Columbus, O.	1850	Lutheran	Rev. Prof. M. Loy, A.M.........	10	40
Ohio State University......	Columbus, O.	1873	Non-sect.	Walter Quincy Scott, D.D.......	22	335
Ohio Wesleyan University..	Delaware, O.	1841	Meth. Episc. .	Rev. Chas. H. Payne, D.D.,LL.D.	23	287
Kenyon College	Gambier, O..........	1824	Protest.Episc.	Rev. Wm. B. Bodine, D.D.......	9	60
*Denison University	Granville, O.	1831	Baptist	Rev. A. Owen, D.D.		
Hiram College	Hiram, O.	1864	Disciples.....	B. S. Dean	10	39
*Western Reserve College ..	Hudson, O.	1826	Non-sect.	Rev. Carroll Cutler, D.D........		
Ohio Central College	Iberia, O.	1854	Christian	John P. Robb, A.M.	4	12
Marietta College	Marietta, O..........	1835	Non-sect.	Rev. Isr.W. Andrews, D.D.,LL.D.	8	69
*Mt. Union College.........	Mt. Union, O.	1843	Non-sect.	O. N. Hartshorn, LL.D..........		
*Franklin College..........	New Athens, O.	1825	Non-sect.	Rev. George C. Vincent, D.D. ...		
Muskingum College	New Concord, O.	1837	Unit. Presbyt	Rev. F. M. Spencer.............	9	63
Oberlin College	Oberlin, O...........	1833	Congregat....	Rev. James H. Fairchild, D.D...	32	370
Rio Grande College	Rio Grande, O.	1876	F. W. Baptist.	A. A. Moulton, A.M............	8	18
*McCorkle College	Sago, O..............	1873	Assoc. Presby.	Rev. William Ballantine, A.M...		
Scio College	Scio, O.	1866	Meth. Episc. .	J. N. Raveill	10	50
Miami Valley College	Springboro, O.	1870	Friends	Eugene H. Foster, A.B., A.M....	6	25
*Wittenberg College	Springfield, O.	1845	Eng. Luth. ...	Rev. J. B. Helwig, D.D..........		
Heidelberg College	Tiffin, O.............	1851	Refor. Church	Rev. Geo. W. Williard, D.D. ...	6	84
*Urbana University.........	Urbana, O.	1850	Swedenborg..	Rev. Frank Sewall, A.M.........		
Otterbein University.......	Westerville, O.	1847	Unit. Breth. .	Rev. H. S. Thompson, D.D.	10	95
*Geneva College	West Geneva, O......	1849	Ref. Presbyt..			
Wilberforce University.....	Wilberforce, O.......	1854	Afr. Meth. Ep.	Rev. Benjamin F. Lee, D.D.	12	10
Willoughby College	Willoughby, O.	1859	Methodist ...	J. C. Ward	4	
Wilmington College	Wilmington O.	1870	Friends	J. B. Unthank	6	22
University of Wooster......	Wooster, O.	1866	Presbyt.	Rev. A. A. E. Taylor, D.D.	16	200
Antioch College	Yellow Springs, O...	1852	Christian	O. J. Wait	6	8
Xenia College	Xenia, O.............	1850	Meth. Episc. .	W. H. DeMotte, LL.D...........	7	
*Corvallis College	Corvallis, Oreg.	1868	Meth. Ep. S. .	B. L. Arnold, Ph.D.		
*University of Oregon......	Eugene City, Oreg. ..	1876	Non-sect.	J. W. Johnson		
Pacific University	Forest Grove, Oreg. .	1854	Christian	Rev. John R. Herrick, S.T.D. ...	5	10
Blue Mountain University .	La Grande, Oreg.....	1876	Meth. Episc. .	George M. Irwin, A.M.	4	
McMinnville College	McMinnville, Oreg. .	1859	Baptist	E. C. Anderson	3	
Christian College..........	Monmouth, Oreg. ...	1865	Christian	D. T. Stanley	7	35
*Philomath College	Philomath, Oreg. ...	1865	Unit. Breth...	Rev. Wayne S. Walker, A.M.....		
*Willamette University	Salem, Oreg.	1854	Meth. Episc. .	Chas. Edw. Lambert, A.M., B.D.		
Western Un. of Pennsylvania	Allegheny, Pa.	1819	Non-sect.	Henry M. McCracken, D.D.. ..	18	75
Muhlenberg College........	Allentown, Pa.	1867	Lutheran	Rev. B. Sadtler, D.D.	6	80
*Lebanon Valley College ...	Annville, Pa	1866	Unit. Breth...	Rev. D. D. DeLong, A.M........		
*St. Vincent's College......	Beatty, Pa...........	1846	Rom. Cath....	Rev. Hilary Pfraengle, O.S.B ...		
Dickinson College	Carlisle, Pa..........	1783	Meth. Episc .	Rev. James A. McCauley, D.D...	6	100
Pennsylvania Military Acad.	Chester, Pa.	1862	Non-sect.	Col. Theo. Hyatt, M.A.	12	100
Lafayette College...........	Easton, Pa...........	1832	Presbyt.	Rev. W. C. Cattell, D.D., LL.D. .	22	296
*Ursinus College...........	Freeland, Pa.........	1870	Ref. Ger.			
Pennsylvania College.......	Gettysburg, Pa.	1832	Lutheran.....	Rev. Milton Valentine, D.D.	10	105
Thiel College	Greenville, Pa.	1870	Evang. Luth..	Rev. H. W. Roth, A.M.	6	55
*Haverford College.........	Haverford Coll., Pa..	1832	Friends	Thomas Chase, LL.D.		
*Monongahela College......	Jefferson, Pa.	1868	Baptist	Rev. H. K. Craig, D.D.		
*Franklin&Marshall College	Lancaster, Pa........	1853	Reformed....	Rev. Thomas G. Apple, D.D.....		
University at Lewisburg ...	Lewisburg, Pa.......	1846	Baptist	Rev. David J. Hill, A.M.	8	70
*Lincoln University	Lincoln Univ., Pa. ..	1856	Non-sect.	Rev. I. N. Rendall, D.D.		
St. Francis College	Loretto, Pa..........	1850	Rom. Cath....	Rev. Brother Angelus, O.S.F. ..	9	75
*Allegheny College..........	Meadville, Pa........	1817	Meth. Episc. .	Rev. Lucius H. Bugbee, D.D. ..		
Palatinate College..........	Myerstown, Pa......	1868	Refor. Church	Rev. Geo. B. Russell, D.D.......	8	110
*New Castle College........	New Castle, Pa.	1872	Non-sect.	W. N. Aiken..........		
Westminster College	New Wilmington, Pa.	1852	Unit. Presbyt.	Rev. E. T. Jeffers, D.D..........	7	80

COLLEGES AND UNIVERSITIES IN THE UNITED STATES. — Concluded.

NAME.	Location.	Org.	Religious Denomination.	President or other Chief Officer.	PI	St.
La Salle College	Philadelphia, Pa.	1867	Rom. Cath.	Rev. Brother Romuald	14	217
*St. Joseph's College	Philadelphia, Pa.	1851	Rom. Cath.	Rev. B. Villiger, S.J.		
University of Pennsylvania	Philadelphia, Pa.	1749	Non-sect.	Wm. Pepper, A.M., M.D., LL.D.	86	903
Catholic College of the Holy Ghost	Pittsburgh, Pa.	1878	Rom. Cath.	P. W. Power	11	130
Lehigh University	South Bethlehem, Pa.	1866	Prot. Episc.	Robert A. Lamberton, LL.D.	20	180
*Swarthmore College	Swarthmore, Pa.	1869	Friends	Edward H. Magill, A.M.		
*Augustinian College of Villanova	Villanova, Pa.	1842	Rom. Cath.	Rev. Joseph A. Coleman, O.S.A.		
Washington & Jefferson Coll.	Washington, Pa.	1802	Presbyt.	Rev. J. D. Moffat, D.D.	9	166
*Waynesburg College	Waynesburg, Pa.	1850	Cumb. Presby.	A. B. Miller, LL.D.		
Brown University	Providence, R. I.	1765	Baptist	Rev. E. G. Robinson, D.D., LL.D.	18	269
College of Charleston	Charleston, S. C.	1792	Non-sect.	H. E. Shepherd	5	30
South Carolina College	Columbia, S. C.	1804	Non-sect.	J. M. McBryde	9	147
Erskine College	Due West, S. C.	1839	Ass. Ref. Pres.	Rev. William M. Grier, D.D.	6	55
*Furman University	Greenville, S. C.	1851	Baptist	Rev. Charles Manly, D.D.		
Newberry College	Newberry, S. C.	1858	Evang. Luth.	Rev. G. W. Holland, A.M.	6	48
Claflin University	Orangeburg, S. C.	1869	Meth. Episc.	Rev. Ed. Cooke, M.A., D.D., S.T.D.	4	24
Wofford College	Spartanburg, S. C.	1854	Meth. Ep. Sth.	James H. Carlisle, A.M., LL.D.	7	100
Adger College	Walhalla, S. C.	1882	S. C. Presbyt.	Francis P. Mullally, D.D.	4	50
East Tennessee Wesleyan University	Athens, Tenn.	1867	Meth. Episc.	Jno. F. Spence, D.D., S.T.D.	8	48
*Beech Grove College	Beech Grove, Tenn.	1868	Non sect.	M. Parker		
*King College	Bristol, Tenn.	1868	Presbyt.	Rev. J. D. Tadlock, D.D.		
*Southwestern Presbyt. Un.	Clarksville, Tenn.	1874	Presbyt.	Rev. J. N. Waddel, D.D., LL.D.		
Hiwassee College	Hiwassee Coll., Tenn.	1849	Meth. Ep. Sth.	Rev. J. H. Brunner, A.M., D.D.	6	173
Southwestern Baptist Univ.	Jackson, Tenn.	1874	Baptist	Geo. W. Jarman, M.A., LL.D.	6	84
*University of Tennessee	Knoxville, Tenn.	1808	Non-sect.	Rev. Thomas W. Humes, S.T.D.		
Cumberland University	Lebanon, Tenn.	1842	Cumb. Presb.	Nathan Green, LL.D.	10	78
Manchester College	Manchester, Tenn.	1866	Non-sect.	Clark & Estill	3	25
Maryville College	Maryville, Tenn.	1819	Presbyt.	Rev. P. M. Bartlett, D.D.	12	22
Bethel College	McKenzie, Tenn.	1855	Cumb. Presb.	W. B. Sherrill	4	50
Christian Brothers' College	Memphis, Tenn.	1871	Rom. Cath.	Brother Maurelian	15	50
Mosheim College	Mosheim, Tenn.	1869	Lutheran	J. C. Barb	4	60
Carson College	Mossy Creek, Tenn.	1853	Baptist	B. G. Manard, D.D.	4	75
Central Tennessee College	Nashville, Tenn.	1866	Meth. Episc.	Rev. J. Braden, D.D.	17	10
Fisk University	Nashville, Tenn.	1867	Congregat.	Rev. E. M. Cravath, M.A.	16	35
Vanderbilt University	Nashville, Tenn.	1875	Meth. Ep. Sth.	Landon C. Garland, LL.D.	43	250
*University of the South	Sewanee, Tenn.	1860	Prot. Episc.	Rev. Telfair Hodgson, D.D.		
Burritt College	Spencer, Tenn.	1848	Christian	A. S. Seitz, Acting Prest.	8	
*Greenville and Tusculum College	Tusculum, Tenn.	1794	Non-sect.	Rev. W. S. Doak, D.D.		
*Winchester Normal	Winchester, Tenn.			James W. Terrell		
*Woodbury College	Woodbury, Tenn.	1860	Non-sect.			
*Texas Military Institute	Austin, Tex.	1868	Non-sect.	Col John G. James		
Texas State University	Austin, Tex.			O. N. Hollingsworth		
*St. Joseph's College	Brownsville, Tex.	1865	Rom. Cath.			
University of St. Mary	Galveston, Tex.	1854	Rom. Cath.	Rev. A. M. Truchard	15	200
*Southwestern University	Georgetown, Tex.	1840	Meth. Episc. S.	Rev. F. Asbury Mood, A.M., D.D.		
*Henderson Male & Female College	Henderson, Tex.	1873	Non-sect.			
Baylor University	Independence, Tex.	1845	Baptist	Rev. Wm. Carey Crane, D.D., LL.D.	6	90
*Mansfield Male & Female College	Mansfield, Tex.	1869	Non-sect.	Rev. John Collier		
*Salado College	Salado, Tex.	1860	Non-sect.	George D. Alexander		
Austin College	Sherman, Tex.	1849	Presb. Old Sch	E. P. Palmer, D.D.	4	30
Trinity University	Tehuacana, Tex.	1868	Cumb. Presb.	S. T. Anderson	8	64
*Waco University	Waco, Texas	1861	Baptist	Rev. R. C. Burleson, D.D.		
Marvin College	Waxahachie, Tex	1870	Non-sect.	Gen. L. M. Lewis, D.D.	13	72
University of Deseret	Salt Lake City, Utah.	1850	Non-sect.	John R. Park, M.D.	6	
University of Vermont	Burlington, Vt.	1791	Non-sect.	Rev. Matthew H. Buckham, D.D.	10	100
Middleburg College	Middleburg, Vt.	1800	Congregat.	Rev. Cyrus Hamlin, D.D., LL.D.	6	40
*Norwich University	Northfield, Vt.	1834	Prot. Episc.			
Randolph Macon College	Ashland, Va.	1832	Method.	Rev. William W. Bennett, D.D.	7	107
Emory & Henry College	Emory, Va.	1839	Method.	Rev. David Sullins, D.D.	7	95
Hampden Sidney College	Hampden Sidney, Va.	1783	Presbyt.	Rev. J. M. P. Atkinson, D.D.	6	58
Washington & Lee University	Lexington, Va.	1777	Non-sect.	Gen. G. W. C. Lee	14	114
Richmond College	Richmond, Va.	1844	Baptist	B. Puryear, M.A., LL.D.	9	145
Roanoke College	Salem, Va.	1853	Lutheran	Julius D. Dreher, A.M.	10	120
*University of Virginia	Univ. of Virg., Va.	1825	Non-sect.	James F. Harrison, M.D.		
*College of William & Mary.	Williamsburg, Va.	1690	Non-sect.			
Washington University	Seattle, Wash. Terr.	1862	Non-sect.	L. J. Powell		360
*Holy Angels' College	Vancouver City, " "	1866	Rom. Cath.	Rev. Louis de G. Schram		
*Bethany College	Bethany, W. Va.	1841	Christian	W. K. Pendleton, LL.D.		
*West Virginia College	Flemington, W. Va.	1868	Fr. Will Bapt.	Rev. D. Powell		
West Virginia University	Morgantown, W. Va.	1867	Non-sect.	Wm. L. Wilson	13	97
*Shepherd College	Shepherdstown, W. Va.	1871	Non-sect.	Joseph McMurran, A.M.		
*Lawrence University	Appleton, Wis.	1853	Meth. Episc.	Rev. E. D. Huntley, D.D., LL.D.		
Beloit College	Beloit, Wis.	1847	Congr. & Presb.	Aaron L. Chapin, DD., LL.D.	10	70
*Galesville University	Galesville, Wis.	1859	Presbyt.	J. W. McLaury, A.M.		
University of Wisconsin	Madison, Wis.	1849	Non-sect	Rev. John Bascom, DD., LL.D.	37	345
Milton College	Milton, Wis.	1867	7th day Bapt.	Rev. William C. Whitford, A.M.	9	241
*Marquette College	Milwaukee, Wis.			Rev. Joseph F. Riggs, S.J.		
*Racine College	Racine, Wis.	1852	Prot. Episc.	Rev. Stevens Parker, S.T.D.		
Ripon College	Ripon, Wis.	1863	Congr. & Presb	Rev. Edw. H. Merrell, A.M., D.D.	14	85
Pio Nono College	St. Francis Sta., Wis.	1870	Rom. Cath.	Rev. Wm. Neu	5	[illegible]
Northwestern University	Watertown, Wis.	1865	Evang. Luth.	Rev. Augustus F. Ernst	8	32